Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 31 **August, 1948** **No. 8**

Contents

Entered at the Post Office in Minneapolis as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

OFFICIAL JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION

Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
493 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50.

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THE NEW LOOK IN MEDICINE

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Minneapolis, Minnesota

GEORGE BERNARD SHAW once made the typical Shavian statement that "The ice of life is slippery." It seems to me that this statement has more than ordinary significance for the great social order of medicine. The road of medical practice throughout the ages has had the same characteristics as Shaw's "Ice of Life"—hard-cold—slippery. It has consistently been a difficult road. The reception of the lay public has often been cold. And right at this point in history, I dare say, the medical practitioner, whether he realizes it or not, faces a set of circumstances which are the most slippery that have ever confronted his profession.

Tonight we need not be too concerned about the hardness of the road, for worthwhile achievement in any line has always been attained at the price of hard work. No physician who is worthy of the name has any unwillingness about paying the price, in terms of hard work, which his calling demands. We likewise need not be too concerned about the cold skepticism which in the past has often greeted our efforts in the realm of medical research. Broader education has brought the lay public to the realization that such research is essential to its own personal well-being. However, tonight I do wish to talk to you about the currently ice-like situation which confronts us in medicine—the slipperiness underfoot as we move ahead on a path filled with greater responsibility than medical men have ever before faced. That path, according to our own choosing, can lead to higher levels of medical achievement and human welfare under professional initiative, or it will retrogress to a level of enforced mediocrity.

The direction in which our profession moves along this path is largely dependent on what you and I as individual physicians do—not one year, five years, or ten years from now, but tomorrow and the next day and every day. Let us take stock, therefore, of the assets at our disposal, which we must utilize to the fullest if we are to have public opinion firmly on *our* side instead of having it flirt with government-dominated medical care.

Without question the Number One asset of today's medical man is the personal and professional respect which he commands. Every one of us here tonight possesses a generous measure of that asset. Over the span of our careers it is far more valuable than stocks, bonds or bank balances. This respect springs from a variety of sources. Self-sacrifice is one of them. The country doctor who made his rounds in a horse-drawn buggy in bitterest weather had a tremendous reservoir of respect in his local community. We are out of the horse and buggy days now, but countless doctors who daily demonstrate similar devotion to their calling and an equal measure of human kindness have just as great a backlog of respect. Education is another source of this respect. Today when bachelor's degrees are becoming commonplace, the doctor of medicine continues to advance to an ever-higher plateau of learning which not only enables him to keep pace with increased demands of his profession but enlarges his potentiality for community leadership. Confidence is another wellspring of respect.

Presidential Address, read at the annual banquet of the Minnesota State Medical Association, Minneapolis, Minnesota, June 8, 1948.

Basically, I believe the confidence of the layman in the physician represents a confidence in the standards of professional medicine. As the physician discharges his responsibilities in keeping with those high standards, he is automatically an heir to the respect which stems from the public's confidence in the profession as a whole. I could name other sources of this invaluable asset of public respect—they are too numerous to mention, and each of us has his own personal store of them. One which has reflected lasting credit on the profession as a whole is the magnificent humanitarianism and selflessness displayed on the battlefronts of the late war by many members of our group.

Now assets, whether they be of the tangible type found in the world of commerce, or of our own less tangible kind, are valuable only to the extent that they are put to proper use. And what a challenge we medical men face today to put our assets consciously and boldly to work to promote the public welfare by promoting the things for which we stand! Let's look for a moment at the factors which today demand that we put these assets to work if our ability to serve is to go unimpaired.

First of all, we all recognize that the same forces which have materially altered the social order during the past several decades, and which more than ever before have increased the importance of the individual citizen, have likewise brought about significant changes in the attitude of the citizen toward his doctor. These forces and the attitudes which they create are at work in both directions, that is, doctor to layman and layman to doctor. Just as today's age of speed makes obsolete the old horse and buggy mode of operation, so it places new and ever-greater demands on the modern doctor. He must cover more ground, minister to more patients, and at the same time keep abreast of accelerating scientific advancement. Because even we doctors are human, it is only natural that oftentimes our daily services are rendered more hurriedly and with a less personal touch than in days past. We are likely to forget that the individuals with whom we deal by the score are just as human and just as desirous of receiving adequate personalized attention as were the patients of yesteryear with whom the doctor dealt leisurely in ones and twos.

On the other hand, the layman of today has evolved into a creature more *inquisitive* and more demanding of his physician than patients ever before have been. The modern American mind is also extremely receptive to emotional appeals, which fact in no way makes the doctor's job any easier. One result is that public attitudes tend to be strongly influenced in favor of the side which gets its story across more clearly and more completely, assuming, of course, that the story is a good one. This emotional influence cannot be ignored in the physician's daily scheme of operation.

By this time you may be thinking: "Well, what does this have to do with me? Don't tell me this fellow is going to start advising me how to run my practice!"

Fortunately, no. That would be impossible even if I wished to do it, because, thank goodness, the medical profession is still a stronghold of unfettered intelligent initiative. But—let us right here and now resolve not for a single minute to lose sight of the fact that the sum total of the daily conduct of our individual practices is entered on the debit or on the credit side of American medicine. Your relations and my relations with our respective clients help to make or break the ability of medicine to continue performing a high calibre of service for the American people and for the world.

Let us not for a minute delude ourselves with any notions of a public which over all is deeply thankful to us for work schedules which include long, irregular days and fatiguing, interrupted nights. A common notion is that the doctor is seldom immediately available because he is forever running around enjoying all his leisure time. Let us not be complacent in the satisfaction that the statements we tender our patients at the end of the month generally represent excellent value received because *we* know the toil and the concern which have gone into our ministrations. The patient has been told repeatedly by certain groups who take pains to get into public print that he is being cheated. Now he is beginning to believe it. (Why shouldn't he? No doctor has ever told him anything to the contrary!) And let us not be too gratified by the fact that we recognize today's superior medical service is possible only because the American procedure is established upon the bedrock of scholarliness, integrity and sound achievement. How *we* feel about our profession is important, but how *the public* feels about us is of even greater significance.

Right now the cold, blunt facts are that, despite its heritage of remarkable achievement, American medicine—and that means you and me, who are a part of it—is facing the severest kind of criticism which, if unanswered, promises to lead to consequences that will inevitably be regrettable and inimical to the welfare of American society.

I hope you won't misunderstand me. When I imply that our critics should be answered, I do not mean that American medicine should go on the defensive. American medicine does not have to go on the defensive. What it does have to do is to take out from under the bushel the light which will reveal that modern medicine is more than just alive and kicking. That it has a heart and soul. It is imperative as I see it that we medical men merchandise our assets to the end that our profession is unquestionably allied with the public interest—so that our endeavors and objectives will be readily recognized by the average citizen as being identical with his health and welfare, and duly considerate of his pocketbook.

One sure avenue in that direction is to drop some of our unwarranted reticence. We must stop looking at ourselves for a change and begin looking at the other fellow who makes up our clientele. We must get on somewhat more common ground with him, in our attitude, in our language, and in the small amenities of everyday business, which he will appreciate, and which are certain to redound favorably to us in our growth in the profession.

Let me report one or two current criticisms which I believe are fairly typical: A few days ago a friend of mine was heard to say, "It has been my experience that the better qualified a doctor is professionally, the less inclined he seems to be to spare even a reassuring word of sound information to his patients. Frankly, I pay my fees to my doctor for something more than simply to hear him grunt when I ask him a reasonable question." In days gone by when public curiosity was less keen and the physician's word represented unquestioned authority, the doctor's "grunt" was somewhat more passable, if no less ill-mannered. Today, however, it connotes just one thing—a public-be-damned independence which insults the patient's dignity. One thoughtless doctor multiplied by one patient who has been slighted can work untold ill toward the professional cause of all of us. If many doctors the country over indulge in this single expensive luxury of abruptness, the equation reaches astronomical proportions.

Not that a successful medical practice depends on devoting a large portion of our time to pampering prima donna patients. But, somewhere there always exists a middle ground, a happy medium in human relations which it is part of the intelligent doctor's job to detect, and to apply.

Here's another increasingly common criticism: A couple of weeks ago an executive of a large corporation, a man in good circumstances, was irritated because his daughter's overnight stay in a hospital following tonsillectomy had resulted in what he considered a greatly excessive charge. Whatever the justification for this charge, it came as a shock to this person of good means. We can only assume it would have been nothing short of staggering to the average working man. Does such a situation disturb you? It does me, because in the mind of the lay public the distinction between medical and hospital expenses is practically non-existent. If anything, the cost of hospital care is associated with the physician himself and he is given the blame if that cost seems exorbitant. I venture that there is no one here tonight who has not suffered some blame because the medical world has failed to hammer home this distinction.

Let us not underestimate the mounting public feeling over this situation. While hospital costs are a factor not readily controllable by physicians themselves, the reflection which they are currently casting upon our profession behooves us to give serious consideration to a clear-cut public explanation of these costs and the reasons why the doctor is not to blame for them (except in the injudicious use of expensive laboratory procedures). I have yet to see a situation where the public, if given the facts in understandable language, does not respond with sympathetic understanding, which in this instance would be of untold benefit to us.

The formidable accumulation of circumstances coming to bear on modern medical practice from all directions is not unlike a snowball gathering both bulk and momentum as it rushes down hill. This combination of circumstances sets the stage of public opinion for a medical panacea which promises something twice as good at half the cost or less, just as surely as the stage was set a couple of decades ago for economic panaceas

which would free the populace from the humdrum drudgery of earning a living and paying taxes.

"Well and good," you may be saying. "If that's the case, why not just sit tight and let nature take its course? After a while things will return to normal and the pressure will be off. Why get excited?"

I hope that not too many doctors are viewing the situation that way. Those who do are, in my opinion, letting their professional obligations and their future go by default. For one thing, it is idle to look for a return to "normal" in the sense that prewar medical practice was normal. Medical science has received its own dose of jet propulsion during the past six or seven years and it promises to keep all of us moving faster in the discharge of our duties throughout the foreseeable future. If the medical schools continue to produce graduates at the present rate and if Uncle Sam becomes more liberal in the release of medics now in the armed forces (which at present seems more unlikely than ever), we might without too much difficulty be able to maintain a constant level of satisfactory service to all clients desiring it. That is—if the proportion of the population needing such services were to remain constant. But—the growth of geriatrics is enabling more and more people to reach the age brackets where the incidence of ill health places a proportionately greater strain upon the medical services. Whereas in 1900 only 3,000,000 U. S. citizens were over sixty-five years of age, in 1940 there were 9,000,000, and under present trends it is estimated that in 1960 there will be 14,000,000, and in the year 2000 there will be 21,500,000 over the age of sixty-five.

To some this trend might be a clear-cut case for government action. But, a great many of your friends and mine will be among those 14,000,000 who in 1960 will be sixty-five or older. Those people are no less human and no less deserving of the high calibre service which American medicine has been accustomed to give than are those who are sixty-five today. As great as is the challenge presented by this expanding need for medical service, I do not believe it is too great for our combined abilities, any more than I believe that it can be satisfactorily met through some mysterious pushbutton planning. On the contrary, it seems to me that this challenge calls for the prompt, continuous, logical application of those assets which we have in ample store but which we have by custom failed to exploit fully. Hard work will not be enough, although there will be plenty of that. Equally important will be a purposeful dedication of our thoughts and energies toward more efficient, common-sense means of performing our duties, to the end that the greatest possible service will be rendered to the greatest number at a cost which may readily be regarded as reasonable.

Admittedly this is an ideal. But it is not an ideal in the sense that it is far beyond attainment. We *must* attain someting approximating this and we must periodically make public our progress toward this attainment if the privilege of aiming at this goal is to be left in our hands. This challenge for greater service will not be met by pronouncements from public platforms. It will not be met in the medical convention halls. It will not be met in the technically phrased trade journals. It can be met only by you, the doctor on the home-town firing line, working as an individual professional man and in concert with doctors the country over as a member of a socially conscious medical fraternity.

It is not too much to say that your every social and professional word and act can be a valued enlistment in this cause. But to do so it must be consciously geared to the new look in medicine which calls for closer harmony and more mutual appreciation between doctor and patient, between doctor and layman, between doctor and business man, between doctor and civic leader, between doctor and editor.

Every one of us has his own traits and his own circumstances with which to cope, so it is unwise to be too dogmatic or to rely on a pat formula by which we may be guided in making our individual contributions toward meeting today's challenge to medicine. But in these closing moments I cannot help but pass along to you a few simple "fashion hints." To many of you these may sound as old as the bustle or the hoop skirt, but they are definitely a part of the "new look" in medicine which is called for by these times:

Let us get better acquainted with men in occupations unrelated to medicine, and enable them to take a closer look at us. The doctor whose presence at a social function consists of sitting off in a corner talking shop with another doctor may be adding in a small way to his knowledge, but he is losing out in a big way on the oppor-

tunity to let others in the groups outside of his profession get a better appreciation of medical science and the men who are engaged in it.

Let us polish up our good citizenship. An "M.D." should be the hallmark of leadership in the eyes of every layman, and many a doctor is living up to that leadership, although too often it is confined to purely medical projects. Too many doctors still regard civic, educational and social service endeavors either "a little out of their field" or "too demanding on their time." We cannot arouse public enthusiasm for our cause if, in the limelight of the professional arena, we dodge our civic responsibilities.

Let us avoid long-hair phraseology which suggest that we are hiding behind a cloak of technical knowledge. Many a patient would feel he is receiving more satisfactory treatment if common one and two syllable words were substituted for medical mumbo-jumbo he cannot understand.

Let us make a conscious effort to be visibly interested in our patients as personalities. Our manner should clearly indicate that their problems are our foremost concern of the moment. It is time we doctors stopped making laymen discount our attitude toward them with such observations as, "Well, Dr. Jones is a busy man and deeply absorbed in his work. I suppose that's what makes him a little peculiar."

Let us wear a friendlier smile. I do not mean that every doctor should have a petticoat of white teeth showing beneath the hem of his upper lip, but a sincere smile that springs from within can do more to set a patient and his family at ease—and again to make him feel satisfied that he is getting valuable personal attention—than can any recitation of formidable medical facts.

Let us give more credit when and where credit is due. To my knowledge, no doctor has ever hurt his own reputation by publicly praising outstanding work of another doctor. There is reason to believe that a little more of such justifiable praise would do much to allay the common misconception that medical men are split by wide personal differences and jealousies.

Let us take a more active part in the efficient operation of our hospitals. The public will sympathize with us when we explain that high hospital costs do not originate with us, but they will not excuse us from the responsibility of working to keep those costs down and to make adequate hospital care financially possible for broad segments of the citizenry.

Let us keep abreast of national affairs and national policies, particularly as they affect medicine.

Let us determine to gauge all our actions by their potential effect on our clients and on the public. Only then can we expect that the public will vigorously agree that medical men still know more than anyone else how to run their own business. Complacency and aloofness must give way to agreeableness, aggressiveness, sociability and well-mannered salesmanship.

These represent just a starter. Many of you are already ahead of me; you are analyzing your own situations and adding more precepts which these situations suggest. As I visualize the great reserves of energy, ideas, brains, skill and humaneness on which American medicine, as symbolized by yourselves, can draw, I cannot help but feel that the impending challenge will be met. I feel certain that meeting it will bring out the best that is in us. And I believe that the story of our preparedness and determination to meet that challenge will merit the kind of respect that will clear the ice from underfoot, and permit American medicine to continue forward on a solid path of public appreciation and public approval.

HOSPITAL CONSTRUCTION ACT PROGRESS

Progress under the Hill-Burton Act (Public Law 725) is far better than most proponents of the Act expected. Only six months have passed since approval of the first project, yet (July 1) 347 projects have been approved in forty-two states. Also contrary to expectations, the program is reaching into areas really in need of additional facilities.

The picture on May 15, 1948, was as follows (July data not available): forty-six states and territories have state-wide plans approved; 39 million dollars are involved in 272 construction projects approved in thirty-one states. The 272 projects include: 244 hospitals, 23 health centers, and 5 auxiliary facilities.

Most of the 212 proposed general hospitals are under 50 beds: Under 25—51; 25 to 50—76; 50 to 75—52; 75 to 100—10; 100 and over—23.

Most of these general hospitals will be located in rural communities: 93 in towns under 2,500 population; 47 in towns 2,500 to 5,000 population; 35 in towns 5,000 to 10,000 population; 23 in towns 10,000 to 25,000 population; 4 in towns 25,000 to 50,000 population, 10 in towns 50,000 population and over.—News Letter, Council on Medical Service, A.M.A., Vol. V, No. 6, July 22, 1948.

PRACTICE OF MEDICINE IN RAMSEY COUNTY

JOHN M. CULLIGAN, M.D.
Saint Paul, Minnesota

FIRST of all, I wish to express my sincere gratitude to the members of the Ramsey County Medical Society for the honor conferred upon me by electing me your president for the year 1947. I have enjoyed the year tremendously and have received wholehearted support and assistance from the entire membership of the society, particularly the members of the various committees. It has been a novel and interesting experience for me, and I want you all to know that I am sincerely proud to have been able to serve as your president.

It often has been said that Ramsey County is one of the most enjoyable places to practice medicine because of the spirit of good fellowship and comraderie that exists among the members of the profession. It is my privilege as your retiring president to recall to the minds of some of the older members of the society the factors which have brought this situation about and to acquaint the new members of the heritage which is theirs. This situation is something which should not be allowed to die, as it makes for the happiness of the members of the profession and indirectly aids the quality of medicine in this community. Our new president-elect, Dr. J. Richard Aurelius, expressed succinctly this sentiment by saying, "If I could only eke out an existence practicing medicine in Saint Paul, I would prefer it to any other community even though the monetary returns were much greater elsewhere."

The Ramsey County Medical Society has been the guiding organization of the local profession now for seventy-seven years. This society as we know it today was formed on February 14, 1870, and incorporated later in that year. The purposes of the society are expressed in its constitution as follows: "Its general purposes shall be to contribute to the development and advancement of the science and art of medicine and medical education; to promote the public health; to encourage and foster a spirit of fellowship and co-operation among its members; and to maintain the ethics of the medical profession, to the end that it may enjoy the respect and support of its members and the community."

The first officers of the society were Dr. Daniel W. Hand, president; Dr. Alfred Wharton, vice president; Dr. William Banks, corresponding secretary; Dr. C. H. Boardman, recording secretary; and Dr. Samuel D. Flagg, treasurer.

The organization of medical societies in Minnesota had rather hectic times until the Minnesota State Medical Association was formed February 1, 1869. It was through the efforts of this association that the local county societies in the state were organized, and they have been on a satisfactory basis ever since. That is why the Ramsey County Medical Society, as we know it now, was organized February 14, 1870. Preceding this, in 1853 the Minnesota Medical Society had been formed. It was reorganized in 1856 and languished and died, the last meeting having been held in 1857 in St. Anthony, as Minneapolis was then called. The Saint Paul Academy of Medicine and Surgery was formed in 1860 and incorporated in 1861. This lasted a few years and languished possibly because of the intervention of the Civil War. The Minnesota Homeopathy Institute was formed and incorporated in 1867. The State Medical Society for Eclectic Physicians of Minnesota was formed in 1869. This lasted only a very short time. The Saint Paul School for Medical Instruction was organized in 1870 and was under the direction of Dr. Alexander Stone. This proved to be a very flourishing organization for a great many years.

The first physician to actually locate in Saint Paul for the practice of medicine was John Jay Dewey. He arrived July 15, 1847, when Minnesota was still a territory and had not been admitted to the Union as a state. Previous to this time the only physicians in Minnesota were those stationed at Fort Snelling, who sometimes rendered medical services to some of the residents of Saint Paul in addition to caring for the personnel at the army post. The first army surgeon arrived in 1821. He was Edward Purcell. He was called frequently to attend residents in and around the surrounding country. He died in 1825. He was followed by a surgeon named B. F. Harney and an assistant surgeon named Robert C. Wood in 1835. Reverend Thomas S.

Presidential address presented to the Ramsey County Medical Society, January 26, 1948.

Williamson, M.D., arrived to attend to the spiritual and physical welfare of the post and its environs. He remained at Fort Snelling until 1851 and performed the first marriage by a clergyman in Minnesota Territory. It is interesting to note that surgeon John Emerson, while stationed at Fort Snelling, was the owner of the celebrated negro slave, Dred Scott, whose case involving ownership went to the Supreme Court of the United States. The decision rendered by Chief Justice Roger Brook Taney was a major factor in precipitating the Civil War.

Due to the inability of the post physicians to attend the growing community, most obstetrical cases were attended by midwives who were very numerous in the community. The community was not at all times called Saint Paul. It was known by various names principally Kaposia, Pig's Eye (after Pierre Parrant), Saint Paul's Landing, Saint Paul's, and finally Saint Paul. By 1849 the number of practicing physicians in Saint Paul had increased to five. The first records of deaths were reported June 1, 1850. There were fifteen deaths reported, one individual having attained the age of eighty years. The average age of the fifteen was 20.04 years. It is certainly an excellent compliment to the efforts of the medical profession that today the life expectancy of a child born in Minnesota is sixty-four years. By 1853 ten physicians were in Saint Paul, and in 1860 twenty-seven were practicing here.

In 1853 the first hospital in Saint Paul was started. St. Joseph's Hospital under the direction of the Sisters of St. Joseph opened its doors in 1854. St. Luke's Hospital was opened in 1873 under the direction of the Episcopalian Church. However, preceding this, in 1855 the Christ Church Orphan's Home and Hospital were incorporated. This was the forerunner of the present St. Luke's Hospital. In 1882 Bethesda Hospital was opened under the direction of the Lutheran Church. They remained in their first quarters until 1932 when the present new hospital was opened to the public. In the same year, 1882, the City and County Hospital of Saint Paul was opened. This was long under the direction of Dr. Arthur B. Ancker, and following his death the hospital's name was changed to Ancker Hospital. In 1906 Midway Hospital was opened in modest quarters. Mound's Park Hospital was opened in 1907. These were both under the direction of the Baptist Church. The new Midway Hospital was opened in 1928. St. John's Hospital followed in 1910, and this was also under the direction of the Lutheran Church. In 1911 Gillette Hospital was opened. Since 1897 the crippled had been cared for at the City and County Hospital. With the opening of the Gillette Hospital, crippled children were transferred to this state-operated hospital. In 1913 West Side General Hospital was opened, and this has no direct religious affiliation. In 1920 through a gift of Charles T. Miller, the Miller Hospital was opened. In 1921 the Northern Pacific Hospital was moved from Brainerd to Saint Paul, and it has operated under the direction of the Northern Pacific Benefit Association for the welfare of the railroad's employes. In 1928, through the tireless efforts of Dr. Walter Ramsey, a large enough sum of money was subscribed by people of Saint Paul to build and endow the Children's Hospital. All through the years these institutions have served the public in rendering medical care. They have kept pace with the new developments in medicine and surgery and in all this time have rendered care second to none in the country.

In Saint Paul's medical history numerous epidemics have swept the community. In 1847 and in 1848 what was called miliary fever became very widespread and attacked mostly the young adult population. From the description of the disease, it was undoubtedly an epidemic of scarlet fever. Three epidemics of Asiatic cholera swept through Saint Paul. These were described by Dr. John Armstrong.[1] In 1847 and 1848 a few cases were reported among the arrivals on boats coming from Galena, Illinois, and New Orleans. This epidemic never became very widespread, but in 1855 an extremely widespread epidemic broke out. Every boat arriving brought new cases, as persons were becoming infected on the boats due to drinking impure water. The mortality is not known but deaths were very rapid after infection. Much fear of the epidemic existed throughout the population, and when it was decided that St. Joseph's Hospital was the best place to take care of those infected with cholera, a mass meeting was held at Timm's Grocery Store at Ninth and St. Peter Streets, and the Sisters were warned that if they brought cholera into that neighborhood the hospital would be burned. Also an indignation meeting was held on the West Side when a pest house was proposed

in that neighborhood. However, shortly after this, the epidemic subsided, to recur again in 1866 but only for a short time. The newspapers carried very little concerning the amount of cholera present in the community during these epidemics, as they were afraid it would deter the immigration of people to this thriving community. In fact, frequently the presence of cholera was denied.

In 1861 an epidemic of hydrophobia appeared. Dogs apparently infected in the southern part of the state transmitted the disease here, with the result that all dogs were ordered destroyed and the epidemic ceased.

In 1884 a smallpox epidemic developed, and widespread vaccination was promulgated. As an example to the community, all the Sisters at St. Joseph's Hospital underwent vaccination, except one Sister who hid when her turn came to be vaccinated. She contracted smallpox and was the only member of the religious community who died. On her death bed she pleaded with others not to neglect vaccination.

In 1918, 1919, and 1920, the pandemic of influenza swept the country, including Saint Paul. Practically all the hospitals in the city were turned into influenza hospitals, and the mortality was terrific. It will be interesting to note whether in the next two years an epidemic of influenza will recur, because they have occurred every thirty years for practically as long as medical records have been kept. If we are going to have a recurrence of this epidemic it should break out within the next year or two.

All during this time, typhoid fever was practically always present.

In the early years, articles by physicians in this community were published in numerous journals, principally the *Northwestern Medical and Surgical Journal,* published in Chicago; the *New York Journal of Medical and Collateral Sciences;* and the *Cincinnati Lancet and Observer.* The first medical journal to appear in Minneapolis was the *Minnesota Homeopath,* published in 1854 by George Hadfield.

From 1889 to 1913 the Ramsey County Pathological Laboratory was conducted by the Ramsey County Medical Society. This was discontinued in 1913 because of the formation of pathological laboratories in all the various hospitals.

The Ramsey County Medical Library received its start principally through the efforts of three individuals, Dr. Edouard Boeckmann, Dr. H. Longstreet Tayor and Dr. John Rothrock. The library now contains more than twenty-nine thousand volumes, and is as fine and complete a county medical library as there is in the country. The library has been supported from different sources. In 1899 it was supported by voluntary subscriptions from its members, from the proceeds from the *Saint Paul Medical Journal,* and from an appropriation from the Pathological Laboratory Committee's profits. After the discontinuance of the Pathological Laboratory, the library was supported by appropriation of society funds. The greatest financial support of the society has been derived through the benefaction of Dr. Edouard Boeckmann. He invented and developed Pyoktanin catgut which he manufactured for his own use and that of his colleagues. Through his generosity he contributed this catgut industry to the Ramsey County Medical Society, and it is still being made in the Ramsey County Society rooms on the sixteenth floor of the Lowry Medical Arts Building. Although it is not making much money now, it is at least staying out of the red. However, this business has flourished in the past, and the result of this, the Ramsey County Medical Society is undoubtedly the wealthiest county medical society in the world.

The accumulation of the so-called building fund had rather an interesting beginning. In 1901 the American Medical Association met in Saint Paul for the second time. A subscription was taken for entertainment of the visiting physicians, and after the convention there was a balance of $3,000. This was guarded by Dr. Charles Wheaton and later given to the Ramsey County Medical Society as the nucleus for a building fund. To this original fund was added profits from the *Saint Paul Medical Journal* and from the catgut industry, so that now the Ramsey County Medical Society building fund amounts to $256,051.94 which is held in bonds and stocks. The income from this amounts to $10,812.05 per year. From this income about $6,000 is contributed to the library to help maintain the acquisition of periodicals and medical books. This is augmented of course by moneys supplied from the annual dues of the members.

Also housed in the library is a museum of old instruments and medical gadgets, as well as a small number of old medical books. This was accomplished through the tireless efforts of Dr.

John Armstrong, and it was through his efforts that most of the historical data which I am presenting here to you this evening were preserved.[2]

Several noteworthy events in medical history have occurred in Saint Paul. In 1886 Dr. Justus Ohage, Sr., father of our own Justus Ohage, performed a cholecystectomy in St. Joseph's Hospital, the first ever to be performed in America. Probably the first, but at least the second, bronchoscopy was performed by Dr. Arnold Schwyzer. There is some controversy whether he or Coolidge of Boston performed the first bronchoscopy in America. Dr. Schwyzer had just returned from Europe and had brought a bronchoscope back with him. While he was unpacking the instrument, he got a call from a patient who had a bone lodged in his trachea. He performed a tracheotomy and removed the bone by means of the bronchoscope. This was in the fall of 1904. He was assisted at the operation by Dr. Fred C. Schuldt.

Our own Fred Plondke, while visiting in France in 1906, received about fifty ampules of stovaine from a French chemist and performed a large number of surgical cases under spinal anesthesia on his return home in 1906 and 1907. I believe this was the first time spinal anesthesia was ever performed in America. I do not know whether Dr. Plondke experienced any untoward results from spinal anesthesia, or whether he simply stopped using this anesthesia because he ran out of stovaine.

Another off-shoot of the Ramsey County Medical Society is the Ramsey County Medical Foundation, Inc. This foundation was founded and incorporated November 23, 1938. Every member of this society is automatically a member of the Ramsey County Medical Foundation. Its purpose is to aid indigent physicians and their families. The organization was brought about as the result of the following incident recorded as follows: "Not long ago a respected Saint Paul Physician died penniless in Ancker Hospital. The irony in this instance lay in the fact that this man had himself established an important service at Ancker Hospital. He had headed the service for many years, and it would be difficult to estimate with any accuracy, at this date, how many thousands of dollars worth of skilled medical service—his only capital and stock-in-trade—he had given, without any return whatsoever except the satisfaction of suffering relieved and a duty performed for the sick and needy of Saint Paul and Ramsey County. It is sad that during his last year, he, too, joined the throng of the stricken, but neither the city which he had served so well nor even his professional colleagues found a way to come to his aid."

That incident and some others, equally sad and equally unnecessary, led to the formation of the Ramsey County Medical Foundation, Inc. This foundation was designed expressly to receive funds from other physicians, from their friends and from organizations (both public and private) which they had served, and then to distribute the income from these funds when the need should arise. It will be distributed through the instrumentality of the foundation to just such men as the physician who died at Ancker Hospital, and many another whose practice has dwindled and whose resources are gone, or to the physician's widow or some other dependent left without means.

Many a more fortunate colleague or his wife have wished for such an institution to which they could make a bequest out of their own plenty. Many a grateful organization—recipient of medical service for which the individual physician would accept no pay—has wished for such an institution to which a gift could be made in recognition of the faithful service of its volunteer staff. Many a public institution which has received thousands of dollars worth of service from Ramsey County physicians would gladly have allotted a contribution as part of its regular budget for such a cause, if there had been a legally constituted corporation which could accept the contribution. There has been no such legally constituted body. The Ramsey County Medical Society, to which the majority of qualified physicians belong, was organized for purposes of scientific advancement and cannot accept such funds. It was clear to leaders in the society, however, that a way must be found. A committee of members was appointed to study the matter and see what, if any, instrument could be created which could receive and disburse aid for needy colleagues and their dependents. So the Ramsey County Medical Foundation came into being.

Another activity of the Ramsey County Medical Society at the present time is the development of a blood bank for the benefit of all the members of the profession and their patients. This

is being worked out with the American Red Cross, so that all types of blood and blood derivatives, such as plasma and Rh positive and negative bloods, will be available at all times. If this plan goes through, anyone can get all necessary blood for merely a nominal charge of about $3.00 if he replaces blood taken from the blood bank. Otherwise a larger fee of approximately $25 will be charged. At the present time between 500 and 600 pints of blood a month are used in Saint Paul. This no doubt would be doubled or tripled if enough blood were available.

I have tried to outline to you some of the history pertaining to the practice of medicine as it has existed here since 1820—some of the problems surmounted, some of the institutions developed, some of the activities of the society and individual members of the society who have made medical history—and I hope I have proved the point that Saint Paul has been a wonderful place to engage in the practice of medicine. That this situation still exists is in no small degree due to the remarkable degree of good fellowship, comraderie, consideration and honesty by a very high percentage of the members of the profession. To the younger members of our group, I hope it will not appear presumptuous of me to give a few words of advice.

1. Continue your medical studies, by the reading of medical literature, by attending medical meetings, by association with other physicians and by attending postgraduate courses, so as to keep abreast of medical progress.

2. Be neat and clean in appearance.

3. Be tolerant to a high degree. Remember you are dealing with human beings, and it takes all kinds of people to make a world.

4. Try to develop a mildly humorous attitude, because the physician who pleases his patient has learned much about the art of medicine.

5. Be the first to suggest consultation, particularly before the patient or relatives do, because in this way they will have greater respect for you instead of becoming doubtful or skeptical.

6. Associate yourselves with other physicians socially and professionally, particularly the older well-thought-of members of the profession, for they are frequently able to give you sound advice on how to avoid pitfalls which have beset them; and the corollary that goes with this—avoid the physician who has obtained his practice unethically.

7. Strive to co-operate with your medical confrére and never criticize your competitor and never believe what a patient tells you the other doctor says. Backbiting and slander only lead to bitterness, hard feelings and malpractice suits.

8. Associate yourself with an accredited hospital.

9. Keep the control of medicine in the hands of the profession, and do this by legislation if necessary. Do this above all if you are interested in the private practice of medicine as distinct from socialized medicine. Maintain the doctrine of free choice of physician by the patient. Do not allow the practice of medicine to be taken over by social service workers, politicians, cultists or racketeers.

Now there is one subject which I feel should be mentioned, and I do so with a little hesitancy and trepidation. That is the chasm which has threatened to widen between the general practitioner and the specialist. I feel, however, that bringing the question out into the open may result in clearing up some of the misunderstandings that have developed. Progress and change are inherent in medicine. If when I took my senior examinations in the medical school, I had answered in the light of what we now know, I would have been ignominiously flunked. So in any profession which develops greatly, certain men must of necessity perfect themselves in a limited field.

This has led to the development of specialties and specialists. The specialists have developed their own local societies and groups, and it is only recently that the general practitioners have formed a society of their own. I think it is too bad that this society of general practitioners was not organized many years ago, for I think it serves an admirable purpose. The general practitioner has just as many problems to solve and discuss as any specialist, and a forum where this can be done is advisable. However, the main cause for complaint on the part of general practitioners seems to be the fear of their exclusion from the hospitals. In 1946 Dr. O. J. Campbell,[3] then president of the Hennepin County Medical Society, canvassed all the Minneapolis hospitals, and this year I interrogated representatives of all the hospitals in Saint Paul, and I can say definitely that there is no inclination on the part of any of the authorities in the Twin Cities' hospitals

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BRAIN TUMORS IN CHILDREN

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THERE have been numerous reports in the literature concerning brain tumors. Except for those of Bailey et al,[1] Ford,[7] Globus et al,[9] and Zülch,[16] few of them have been limited to the tumors occurring during childhood. This fact is surprising, inasmuch as the frequency, the type of tumor, the location and the clinical course in the two age groups, childhood and adulthood, are not at all similar.

Recently, all brain tumors occurring in children of sixteen years of age and younger which were seen at the University Hospitals from June, 1931, to July 1, 1946, have been reviewed. During this fifteen-year period, a diagnosis of brain tumor was made on 202 children. Because of lack of information concerning the clinical course, thirty-one of them are not included in this report. Another twenty-five cases are excluded because of lack of histological verification of the diagnosis. The remaining 146, then, represent only the histologically verified tumors in children in whom complete clinical data are available. In this report, the frequency, location, and histological types of the brain tumors seen in these 146 children will be discussed first, after which the symptomatology and roentgenography will be reported.

Frequency.—There were 819 verified brain tumors during this same fifteen-year period at the University Hospitals. Therefore, 17.8 per cent of all brain tumors seen at this institution occurred in children under sixteen years of age. One per cent of all patients admitted to the pediatric service had a verified brain tumor. Of the 146 tumors occurring in children, seventy-nine occurred in males and sixty-seven in females.

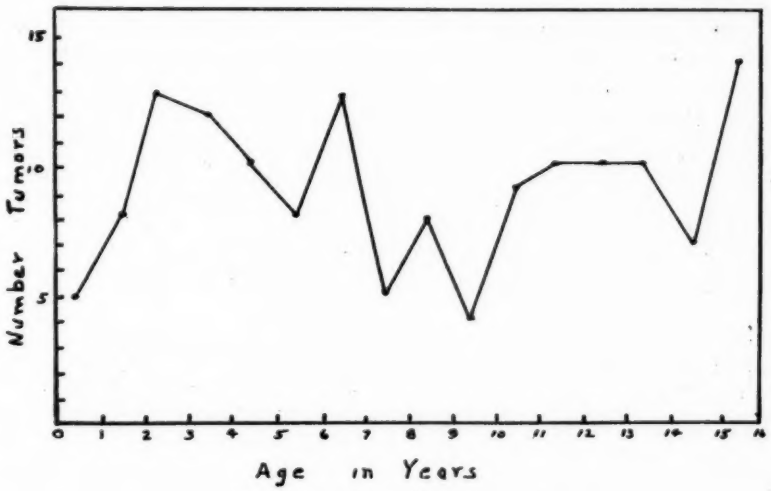

Fig. 1. Age frequency in brain tumors.

There has been considerable discussion concerning the age distribution of the various types of tumors in childhood. Bailey et al[1] and Critchley[3] found the greatest number to occur between the fifth and seventh years of life and attributed this frequency to the preponderence of medulloblastomas in this age group. However, Marburg[11] and Globus[9] found the greatest number to occur before the sixth or after the thirteenth year of life. Figure 1 shows the incidence of tumors in the various age groups in this series. There is a peak incidence at the age of two years which is due to the frequency of ependymomas at this age. It is probable that in a larger series one would

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find that brain tumors occur with equal frequency at all ages throughout childhood.

hypophyseal lesions. The more equal distribution of tumors in childhood on each side of the tentorium as found in this series and by other investigators is therefore more representative of the true frequency of their incidence than the ratio in Cushing's material.

TABLE I. LOCATION OF BRAIN TUMORS IN CHILDREN

	Subtentorial			Supratentorial							
	Vermis and Fourth Ventricel	Hemisphere	Pons and Medulla	Pineal	Hypophysis	Third Ventricle	Frontal	Parietal	Occipital	Temporal	Totals
Neuroma			1								1
Meningioma		1	1		1		1	2		1	7
Astrocytoma	10	17	6			6		2		2	43
Astroblastoma						1	2	1			4
Glioblastoma			3					2		1	6
Oligodendroglioma									1		1
Spongioblastoma		1			1	3					5
Medulloblastoma	12										12
Ependymoma	9	1				4		7	2	1	24
Pinealoma				5							5
Ganglioneuroma			1								1
Angioma		1	2			1	1	2			7
Angioblastoma	1	1									2
Cholesteatoma					3						3
Teratoma								1			1
Craniopharyngioma					4						4
Tuberculoma		5							1		6
Metastatic						1	4 (multiple)				5
Cyst				1							1
Fibroblastoma							1				1
Sarcoma	1	1									2
Total	33	28	14	6	9	16	9	17	4	5	141

TABLE II. PATHOLOGIC CLASSIFICATION

Tumor Type	Number	Number	Percentage
Tumors of Nerves		1	0.7
Tumors of Meninges		7	4.8
Tumors of Neuroepithelium		101	69.1
Astrocytoma	43		
Astroblastoma	4		
Glioblastoma multiforme	6		
Oligodendroglioma	1		
Spongioblastoma polare	5		
Medulloblastoma	12		
Ependymoma	19		
Ependymoblastoma	5		
Pinealoma	5		
Ganglioneuroma	1		
Tumors of Vascular Tissue		9	6.1
Angioma	7		
Angioblastoma	2		
Tumors of Mixed Tissue		4	2.8
Cholesteatoma	3		
Teratoma	1		
Tumors of the Hypophyseal Region		4	2.8
Granulomas		6	4.1
Metastatic Tumors		10	6.8
Miscellaneous Type Tumors		4	2.8
Total		146	100.0

Location.—In this series of 146 brain tumors, seventy-one were located above the tentorium and seventy-five below the tentorium. Cushing stated that the relation between supratentorial and infratentorial tumors in children was 2:1. However, there apparently was a selective factor in his material which brought to him a large number of

Table I reveals the location and the histological type of the brain tumors in this series. In the supratentorial region the most frequent site was the third ventricle and areas adjacent to it. The predominant tumor types in this region were astrocytomas, ependymomas, and spongioblastomas. The parietal region was the next most frequent site, and here the ependymomas were the predominant tumor type. In the subtentorial region, midline tumors were most frequent. The medulloblastomas occurred only in this region. In the cerebellar hemispheres the astrocytoma was by far the most frequent tumor. In the pontine region there were predominantly astrocytomas but also a few glioblastomas and other types.

Histological Types.—All the material available for histological examination was reviewed. Special stains were used when needed to verify a specific tumor type. Table II reveals the relative frequency of the various tumor types.

Tumors of Nerves.—There was only one patient with an intracranial neuroma in this series, and she was a fifteen-year-old girl who had bilateral acoustic neuromas that were a part of a generalized neurofibromatosis. During childhood, tumors of the nerves are exceedingly infrequent. When they do occur, they are part of a generalized neurofibromatosis and, therefore, associated with other stigmata of that disease.

Tumors of Meninges.—The origin and cellular characteristics of meningiomas has been the subject of controversy. In this series there were seven children with meningiomas. There were two lipomatous, two psammomatous, one angioblastic, one sarcomatous, and one meningiothelial type. These meningiomas were located supratentorially in five patients and subtentorially in two patients. In three patients there were multiple tumors. The duration of symptoms preoperatively varied from two days in the sarcomatous meningioma to ten years in the case of the lipomatous type.

A definite impression obtained from reviewing these meningiomas in children is that they differ greatly from those of adults with regard to type, duration of symptoms, amenability to surgery, and postoperative course. All terminated fatally within a month, except one who survived four and one-half years, but during that time he had repeated severe generalized convulsions. Whereas meningiomas in adults are one of the more favorable types of brain tumor in regard to prognosis, in children they are apt to be inoperable because of their frequent malignant histological character and the tendency for multiple sites of origin to occur, especially in the case of the lipomatous, angioblastic, and sarcomatous types.

Tumors of Neuroepithelium.—In children, as compared to adults, there is a relative preponderance of glial tissue tumors. This is due to the infrequency, in children, of neuromas and meningial tumors. In this series, 101 (69.1 per cent) of the tumors arose from glial elements.

The astrocytomas comprised the largest subdivision (42 per cent) of the glial tissue tumors. The prognosis in the astrocytoma group was excellent, especially for those located in the cerebellar region. When so located, total surgical excision was accomplished in over 50 per cent of them, and in the remaining a long survival was frequent.

The next largest subdivision (22 per cent) was composed of tumors arising from the ependymal or subependymal tissues. The prognosis in the slow-growing, well-defined papillomas and myxopapillary type of ependymoma was good. However, the rapid-growing, diffuse, cellular ependymomas and ependymoblastomas could seldom, if ever, be totally excised surgically.

The medulloblastomas comprised the third largest subdivision (11 per cent) of the glial tumors. Medulloblastomas arise in the cerebellar vermis and extend into the fourth ventricle. Proper treatment is wide surgical excision of the tumor followed by deep roentgen irradiation. The prognosis for prolonged survival of a patient with a medulloblastoma is poor.

The remaining types of neuroepithelial tumors were seldom encountered. Prognosis in all of them was poor unless they were located in readily accessible regions. The one exception was the pinealomas, for in them good results were obtained with deep roentgen irradiation.

Tumors of Vascular Tissue.—Tumors of vascular tissue are divided into: (1) those comprised of adult vascular elements, and (2) those comprised of embryonic vascular elements (Noran[13]). In the former class are grouped the cerebral telangiectases and the angiomas, whereas in the latter are grouped the angioblastomas.

In this series there were nine children with tumors composed mainly of vascular elements. Seven of the nine were of the parenchymal angiomatous type, and two were of the angioblastic type. The angiomatous lesions were amenable to surgery, except for three located in the hypothalamic region and brain stem. Both angioblastic lesions were in the cerebellum and were amenable to surgery.

Tumors of Mixed Tissue.—Tumors of mixed tissue are now generally accepted as arising from embryonic rests. They are classified into three types, depending upon the number of germ layers present. The epidermoid is composed of elements of but one germ layer, the ectoderm. The dermoid is composed of elements of two germ layers, the ectoderm and mesoderm. The teratoma is composed of elements representing all three germ layers.

In this series there were three patients with epidermoid tumors and one with a teratoma. The epidermoids were located in the suprasellar region and the teratoma in the corpus callosum. Total surgical removal was not accomplished in any of these tumors. When they are located in more accessible regions, a cure can be accomplished by total surgical excision.

Tumors of the Hypophyseal Region.—The two types occurring exclusively in the hypophyseal region are the pituitary adenomas and the craniopharyngiomas. The former are seldom, if ever, symptomatic during childhood; the latter is a frequently seen tumor type. In this series there were three craniopharyngiomas. Removal of all the tumor could not be accomplished in any of them because the lesion in all was adherent to the hypothalamic region.

Granulomas.—The granulomas include the tuberculomas and gummas. In this series there were no gummas, but there were six patients with tuberculomas. The tuberculoma was solitary in only three of these patients. In all six patients there were tuberculomas in the cerebellum and two had additional cerebral tuberculomas. Suboccipital decompression and treatment of the general systemic disease was the therapy of choice.

Metastatic Tumors.—The metastatic intracranial neoplasms are as frequent in children as in adults. In this series there were ten patients (7 per cent) with metastatic tumors. In all of them the metastatic lesion was located supratentorially. Multiple lesions were present in five patients. The primary tumor was carcinoma of the kidney in three, neurocytoma of the adrenal in two, neuroepithelioma of the orbit in two, leukemia in two, and sarcoma of the orbit in one. All the patients expired within five months after onset of symptoms.

Summary.—One in every 100 children admitted to the pediatric service of the University Hospitals has a verified brain tumor.

In children there is an equal frequency between brain tumors located above and below the tentorium.

Brain tumors occur with about equal frequency in each year of the first fifteen years of life.

Tumors of the cranial nerves are infrequent in children. When they do occur, they are apt to be multiple and part of a generalized neurofibromatosis.

Meningiomas in children are usually of a malignant histological character. Compared to meningiomas in adults, the prognosis is poor.

Astrocytomas in children are often localized tumors, of which total surgical excision can frequently be accomplished.

Ependymal tumors vary from the slow-growing papillomas of the choroid plexus with an excellent prognosis to the rapid-growing ependymoblastomas with a very poor prognosis.

Metastatic brain tumors are equally as frequent in children as in adults.

Symptomatology

There are certain fairly constant symptoms that occur in children with brain tumors which lead one to suspect this diagnosis. There are other symptoms which not only indicate the presence of an intracranial tumor but assist in localization. In this report, the frequency and significance of various symptoms and signs caused by such tumors will be summarized.

General Symptomatology.—A change in the patient's personality was the earliest symptom in 20 per cent of the 146 children in this series, and occurred some time during the course of the disease in 40 per cent of them. The frequency of this change was no greater in the children with supratentorial than in those with subtentorial tumors. The children initially would lose interest in playing with other children, then would become so withdrawn that they ceased to play. They would fail to manifest interest in food; they would prefer to "go lie down" than play or eat. Some children became restless, more irritable, and cried or complained readily.

Symptoms caused by a generalized increased intracranial pressure were usually the next indication of the existence of a brain tumor. A headache, usually mild at first and located over the eyes and forehead, occurred in 71 per cent of the patients in this series. Pressure by the tumor on the falx, tentorium cerebelli, meninges or blood vessels, which are innervated by the trigeminal nerve, causes pain to be referred to the region of the cutaneous distribution of this nerve. The headache, which was usually accompanied by vomiting, frequently occurred in the morning after

the child had arisen from bed, and was considered to be due to the change in dynamics of the blood pressure and the cerebrospinal fluid pressure. Following the vomiting, the headache was usually relieved. The headaches were occasionally localized over the occipital and posterior cervical region. Headache so located is due to irritation of the posterior roots of the cervical nerves which supply the dura in the region of the foramen magnum. Tension on the dura in this region causes pain which is referred to the occipital region. Anything that increases the intracranial pressure, such as coughing, sneezing, or straining, may initiate the headaches, vomiting, and occipital pains. Nausea was an unusual complaint. Patients may lose weight because of the anorexia and vomiting. In three of the patients in this series the vomiting was associated with abdominal pain, and this combination of symptoms simulated appendicitis.

Increasing circumference of the head, bulging fontanelles, palpable widening of the sutures, and dilated scalp veins were clear but late indications of increased intracranial pressure. Likewise, a decrease in visual acuity was a late symptom. Decreased vision was due to one of the four following conditions: (1) papilledema, (2) diplopia, (3) primary optic atrophy, or (4) visual field defects.

There was a certain intermittency of all these symptoms especially in the children under eight years of age. This is considered to be due to the intermittent relief of the increased intracranial pressure from the progressive widening of the cranial sutures.

General Signs of Brain Tumors.—Examination of the children with brain tumors in this series revealed, early in the course of the illness, only signs of increased intracranial pressure. The most frequent evidence of such pressure was papilledema. Other evidence of increased pressure was dilation of the veins over the frontal and occipital regions, widening of the cranial sutures, bulging of the fontanelles, and increased head circumference. Extraocular palsies, especially involvement of the sixth cranial nerve, were occasionally present. Roentgenological evidence of increased intracranial pressure was present in 80 per cent of these patients with intracranial tumors.

The presence of congenital deformities such as multiple cutaneous areas of pigmentation, absence of the roof of the orbit, or asymetrical physical development, when present, should cause one to suspect an associated intracranial tumor.

Localizing Symptoms.—Symptoms that are not primarily due to increased intracranial pressure are ataxia, paresis of the extremities, convulsive seizures, polyuria and polydipsia, and abnormal body development.

Ataxia involving primarily the legs or trunk, and manifested by unsteady gait and a positive Rhomberg sign, was present in 60 per cent of the patients with cerebellar lesions. It was much less frequent in patients with tumors in other regions, and for this reason these symptoms are useful in differentiating tumors in these locations.

Paresis of an extremity was found in only 3 per cent of the patients with tumors located in the cerebellum but was present in 40 per cent of those with tumors located in the cerebrum.

Convulsive seizures occured in 16 per cent of the patients in this series. These were either generalized attacks, localized (Jacksonian) seizures, or cerebellar fits. Jacksonian seizures occurred in four patients, and all four had parietal lobe tumors. Generalized convulsive seizures occurred in twenty-five patients; twenty-three of these had cerebral and two had cerebellar tumors. The presence of Jacksonian or generalized convulsive seizures in a patient with a brain tumor was a reasonably accurate indication of a cerebral localization. There were only two patients with cerebellar type seizures, and in both the attacks were very mild. However, these attacks may be severe and accompanied by cyanosis, respiratory irregularities, and unconsciousness.

Polyuria and polydipsia occurred only in patients with tumors so placed that they could exert pressure on, or infiltrate directly into, the hypothalamic nuclei. This occurred in two patients with pineal tumors, four patients with tumors in the hypothalamic region, and one patient with a tumor in the third ventricle. There was evidence of a Froelich-type dystrophy in one patient with a pineal tumor and in two patients with tumors in the region of the third ventricle.

Localizing Signs.—Signs that are of localizing value are cranial nerve palsies, visual field defects, inco-ordination of the extremities, reflex changes,

nystagmus, restricted upward gaze, and stiff neck.

Cranial nerve palsies occurred in 32 per cent of the patients in this series. Cranial nerve palsies can be divided for diagnostic purposes into three groups: (1) involvement of the nerves supplying the extraocular muscles, due to increased intracranial pressure, and hence, without localizing value; (2) involvement of only the eighth cranial nerve, indicating a neuroma of this nerve; (3) involvement of one of the last six (other than the eighth) cranial nerves, suggestive of a tumor located in the brain stem.

Visual field defects were present only in patients who had a lesion along the optic pathway. A field defect associated with a primary optic atrophy indicated a lesion near the optic chiasm. If the field defect was associated with motor dysfunction, the lesion was in either the temporal or temporal-occipital region.

Inability to perform co-ordinated movements of the extremities occurred predominately in cerebellar tumors. There was no difference between the frequency of incoordination in the patients with midline or laterally placed cerebellar lesions.

Reflex abnormalities were more frequently present in supratentorial (64 per cent) than in subtentorial (21 per cent) tumors. When reflex abnormalities were present in patients with supratentorial tumors, the reflexes were hyperactive and the Babinski sign positive. Cerebellar tumors produced hypoactive reflexes, except when there was pressure on, or direct infiltration of, the brain stem by the tumor, in which case the reflexes sometimes were hyperactive. Such involvement of the brain stem was unusual but occurred with sufficient frequency so that the presence of hyperactive reflexes did not positively exclude a subtentorial lesion.

Nystagmus was present in 46 per cent of the patients with cerebellar tumors. It was also frequently observed in patients with brain stem (48 per cent) and pineal tumors (50 per cent), but was very infrequent in cerebral tumors (14 per cent). Nystagmus, when present, can be interpreted as suggestive of a cerebellar, pineal, or brain stem tumor. Cranial nerve palsies occurred frequently with brain stem tumors but seldom with cerebellar tumors.

Restricted upward gaze was present in 80 per cent of the patients with tumors of the pineal gland. It was present only in these patients and was due to involvement of the superior collicular region.

Stiff neck and pain in the posterior cervical region are included with the localizing signs, because in this series they occurred only in patients with cerebellar and pineal tumors. Fifty per cent of the patients with pineal and 36 per cent of the patients with cerebellar tumors had a stiff neck when first seen in this clinic. Both stiff neck and posterior cervical pains are manifestations resulting from reflex spasm of the muscles due to irritation of the cervical nerves by herniation of the cerebellar tonsils and due to irritation of the dura around the foramen magnum, which is supplied by sensory branches from these nerves.

Summary.—The neurological symptoms and signs produced in children by a brain tumor are of two types: (1) nonlocalizing manifestations due to increased intracranial pressure, (2) localizing manifestations due to direct involvement of the brain tissue by the tumor.

Brain tumors in children are not uncommonly associated with congenital developmental defects, such as multiple neurofibromatosis and telangiectases.

Roentgenography

Roentgenography of the skull is a routine procedure in the investigation for an intracranial neoplasm. The value of such an examination is as great in children as in adults. In this report, the abnormalities suggestive of brain tumors, seen in skull roentgenograms of 123 of the children in this series, will be reviewed, and an attempt will be made to show how roentgenography may be of aid in arriving at a correct diagnosis in such patients. Twenty-three of the 146 cases are excluded because of insufficient or inconclusive data.

Roentgenograms taken in the lateral, posterior-anterior, and occipital positions were routine. Stereoscopic views were obtained whenever it was thought that they would provide additional information. Ventriculograms were performed whenever the existence or localization of a brain tumor was in doubt.

Increased Intracranial Pressure.—Three abnormalities frequently observed in patients with increased intracranial pressure are: (1) widening of the cranial sutures, (2) increased convolutional (digital) markings, and (3) erosion of the sella.

Roentgenograms should not be considered indicative of increased intracranial pressure unless at least two of these abnormalities are present. Ninety-nine of the 123 patients had roentgenologic evidence of increased pressure. In children under five years of age, increased pressure was frequently accompanied by widening of the cranial sutures. In children over ten years of age, widening of the more firmly united sutures was less frequent, but erosion of the sella was often seen (Table III).

TABLE III. ROENTGENOGRAPHIC ABNORMALITIES ACCORDING TO AGE OF PATIENT

Age in Years	Number X-rayed	No. With Roentgenographic Evidence of Pressure		Roentgenological Evidence of Pressure					
				Widening of Sutures		Increased Convolution Markings		Erosion of Sella	
		No.	%	No.	%	No.	%	No.	%
0— 5	39	33	85	21	64	18	59	9	27
6—10	37	30	81	18	60	15	50	14	47
11—15	47	36	76	16	44	21	58	19	52
Total	123	99	80	55	55	54	54	42	42

Local erosion of that portion of the calvarium immediately overlying the tumor was also encountered in this series of patients. This abnormality is due to local pressure of the tumor and should not be confused with the erosion of generalized increased convolutional markings which is due to a generalized increase in intracranial pressure. The erosion here referred to appeared discrete and localized. This type of erosion occurred in four patients, and in all of these it occurred at a point overlying the tumor. Thus, such an erosion is an accurate indication of the location of the tumor.

Pineal Shift.—In 1925 Naffziger[12] reported that a shift in the position of the pineal gland may be of great value in localizing brain tumors. However, the pineal gland is seldom calcified until late in childhood and so this method is of less value in children than in older individuals.

Dyke[5] in 1930, Fray[8] in 1938, Dyke and Davidoff[6] in 1940, and Hawes and Mead[10] in 1943 reported that a posterior displacement of the pineal gland may occur in patients with subtentorial tumors. This is just the reverse of the more frequently seen upward shift (Vastine and Kinney[13]) and is believed to be due to an internal hydrocephalus resulting from a small obstructing subtentorial lesion. However, any shift in the pineal gland is unusual in subtentorial tumors, and it was observed in no case in this series.

Intracranial Calcification.—The presence of calcification visible on microscopic examination in a tumor was first described by Rokitansky and Virchow. Since their original description, the presence of calcium in these tumors has become well recognized. In 1925, van Dessel[4] reviewed the incidence of calcification in gliomas and concluded that calcification was the result of degeneration of hyaline in the walls of the vessels. He noted an increased frequency of calcification in tumors of older people as compared with tumors in younger individuals. He also concluded that it could occur in any slow-growing tumor. However, there are several reports in the literature of calcification occurring in very young children and also in rapidly growing tumors (Boldrey and Miller[2]). There was evidence of abnormal intracranial calcification in twenty-five patients in this series, and in every case in which intracerebral calcification was seen it was found to be within the tumor. Thus, the presence of intracerebral calcification in a patient suspected of having a brain tumor is not only excellent evidence that such a lesion is present, but also the calcium indicates accurately the site of the lesion. Table IV reveals the types of tumors in which calcification occurred in amounts sufficient to be visible in roentgenograms. Some assistance in differential diagnosis can also be obtained from the appearance and the location of the calcification. Suprasellar calcification that seemed to outline a cystic cavity was either a craniopharyngioma or a cholesteatoma. Stippled areas of calcification in the occipital or temporal regions were most likely to be oligodendroglioma, ependymoma, or astrocytoma. Calcification that appeared to outline the cerebral convolutions indicated the presence of an angioma.

Skull Metastasis.—Skull defects due to invasion of the skull by metastatic tumors were visualized in two patients. A tumor in young children which is characterized by metastasis primarily to the skull is the Hutchinson-type neuroblastoma of the adrenal gland. The skull metastasis in this series were from that type of tumor (Table IV).

TABLE IV. LOCALIZING ROENTGENOLOGICAL EVIDENCE OF BRAIN TUMORS IN CHILDREN

Type of Tumor	Calcification		Local Erosion		Metastasis	
	No.		No.		No.	
Meningioma	2		1			
Astrocytoma	5		2			
Angioma	2		1			
Ependymoma	5					
Cholesteatoma	3					
Craniopharyngioma	3					
Spongioblastoma	1					
Pinealoma	1					
Oligodendroglioma	1					
Astroblastoma	1					
Tuberculoma	1					
Adrenal neuroblastoma					2	
Total	25	20.3%	4	3.2%	2	1.6%

Ventriculography.—Ventriculograms were performed in thirty-eight of the 123 patients and were of value in localizing the lesion in twenty-nine of them. In seven patients the ventriculogram was of no diagnostic value. In four of these seven patients, insufficient air was injected, and in the other three there was no abnormality recognized in the ventriculogram even though the ventricular system was well visualized. Poppen and Peacher[14] recently have reported ten cases of verified supratentorial tumors with normal air studies.

Ventriculography was not only of value in determining the presence and localization of the lesion but also was of assistance in judging the operability of the tumor. In this series it was decided that the lesion was inoperable, because of the roentgenographic appearances, in only one patient. This was an extremely diffuse astrocytoma located around the third ventricle. In four patients there was an upward displacement of the posterior horn of the lateral ventricle on one side. This is an unusual defect and was correctly interpreted in all four as significant of a posterior fossa lesion.

Encephalography.—It is inadvisable to perform an encephalogram on a patient with a brain tumor, but sometimes a brain tumor is present but not suspected prior to performing an encephalogram. This is especially true in children because of the frequency of vague neurological signs and symptoms.

In this series, encephalograms were made on eleven of the 123 children. In six of the eleven patients the tumor was demonstrated to be present. In the remaining five patients the air studies were noncontributory. They were noncontributory in two because insufficient air entered the ventricles to outline them well, and in three there was no air in the ventricular system whatsoever.

Summary.—Roentgenograms of the skull revealed evidence of increased intracranial pressure in 80 per cent of children with brain tumors.

Abnormal intracranial calcification was visible in roentgenograms in 20 per cent of children with brain tumors and was an accurate indication of the localization of the tumor.

Ventriculograms were of localizing value in 78 per cent of the children with brain tumors in whom such studies were performed.

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AUTOMATIC ATTENTIVE BREATHING IN ANGINA PECTORIS

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IT WAS in August of 1924 that P. C., aged fifty-four, emphasized the relief he had obtained one day from a severe attack of angina pectoris, when his attention was suddenly diverted to a bird singing on a treetop nearby. At that time this patient had had frequent attacks of chest tightness and chest pain for eight months. He volunteered information further that after that experience he found he could abort an attack at will or shorten one by actively pretending that he was "listening to a bird sing on a treetop," providing he promptly stopped whatever he happened to be doing at the moment and turned his attention to his breathing, while he endeavored to keep himself fully at ease and relaxed. As he demonstrated it to me, his technique consisted in a slowed-up and protracted inhalation, with his chest expanding very slowly during inhalation. His exhalation was slow also, and there was a definite pause between each phase of his respiration. He paid special attention, he informed me, to maintain the chest muscles and his arms relaxed.

I have since modified that technique. I teach diaphragmatic breathing with attention to both phases of respiration and the intervening pauses. In addition, I have added at least one breathing exercise that I prefer to call obstacle breathing. It is done by alternately closing one nostril while inhaling slowly through the other. In so doing, one seems to improve the diaphragmatic type of breathing.

I encouraged this patient to continue this practice because he thought it helped him, but I did not comprehend the significance of it for several years, even though in December, 1927, P. Yogananda[27] called my attention to the values of attentive breathing. Later, circumstances, a search through the literature on respiration and a careful analysis of the physiological factors involved in the act of "listening to a bird," as demonstrated to me by P. C. on several occasions, finally convinced me that "attentive respiration" may be a valuable exercise in some heart ailments, and should be investigated for its potentialities. Hence, I am reporting on eleven cases carefully observed for long periods, in which I considered that breathing exercises were of definite value although I did not consider my controls fully adequate. It was not possible to make my patients quit the respiratory exercises that they learned and which they felt gave them relief in times of distress. After they mastered attentive breathing, it gradually became automatic with them, and they would automatically turn to those exercises at the first approach of any sign of distress. My only control was to keep each patient under observation for at least four weeks or more, on medication, rest and sedatives, before teaching the automatic attentive breathing exercises. However, I am offering this for what it may be worth, and so that others may try it.

Case Reports

Case 1.—P. C., mentioned above, was fifty-three years of age when he had an attack of coronary thrombosis in the fall of 1923 and was confined to his home for over one month. He came to my office the first time in July, 1924, with the chief complaint of frequent attacks of sudden severe pain in his heart area radiating to his left arm. All of his physical findings, as well as blood studies, blood Wassermann test and urinalysis, were negative. The electrocardiographic findings were indicative of myocardial damage on the basis of coronary disease. A diagnosis of coronary disease with angina pectoris was established, which was later confirmed at the Mayo clinic. The patient was a railroad passenger locomotive engineer. He was given the usual medical care, including 1/100 gr. nitroglycerine tablets for sublingual use which he required to obtain relief from symptoms about three or four times a day. However, a few weeks after his accidental discovery of "listening to a bird," and subsequent repeated use of this respiratory technique, he no longer required any drug therapy.

The railroad company did not allow him to work on a passenger locomotive after his first attack, because of the possible risk to lives of passengers, but he worked on freight engines in the roundhouse until his retirement, because of his age, when he became seventy years old. Thus he worked at a harder job for those sixteen years following the initial attack. He died on October 6, 1947, from a cerebral hemorrhage at the age of seventy-seven years. He was in good condition as far as his cardiac ailment was concerned up to the date of his sudden death.

Case 2.—H. R., at the age of thirty-one, had noticed chest pressure and pain after exertion. This became progressively worse and often radiated to either arm

or both arms. His attending physician found hypertension and left heart enlargement. He recommended a vacation, sedatives and nitroglycerine, and later a reduced work schedule.

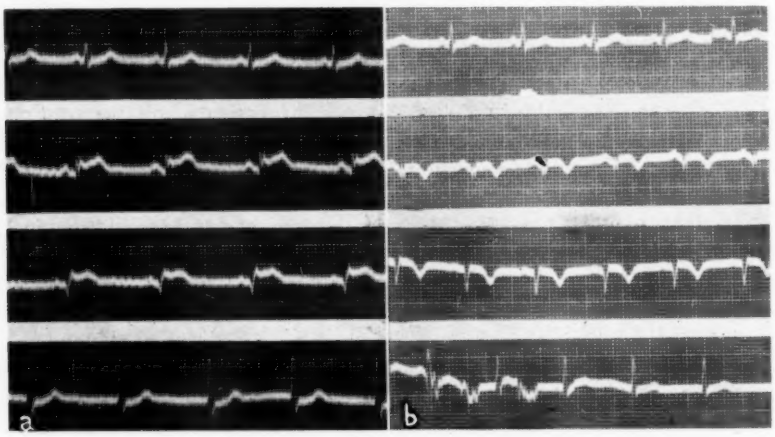

Fig. 1a (Case 4). Electrocardiogram taken at onset, showing a split QRS complex in lead II, a deep Q wave in lead III, an elevated ST interval in leads II and III, and a depressed ST intervals in lead IV.

Fig. 1b (Case 4). Electrocardiogram taken two months later showing different abnormal tracing.

This patient came to me in September, 1926, one year after his first attack but still having symptoms. His physical examination was essentially negative except for a rigid and malformed right elbow which he had fractured at the age of eleven. His blood studies, the blood Wassermann test and urinalysis were all negative. His 6-foot chest plate showed a left-sided hypertrophy of the hypertensive type. His blood pressure varied between 190 and 174 millimeters of mercury systolic, and the diastolic remained constantly at 108 millimeters of mercury. His pulse varied between 76 and 84 per minute. His basal metabolic rate was + 3.

One day, this patient called soon after P. C. (reported above) had left my office. Because of the recent experience with P. C., it occured to me that I might try to teach H. R. attentive respiration exercises. Of course, I did not discontinue any of his medications. He always carried nitroglycerine tablets for sublingual use, and he had used them occasionally. He noted gradual improvement of symptoms over the next twelve months' period, and during the following year he discontinued all drug therapy. He has been free from chest pains now for over eighteen years. I see him frequently, and I consider him as being fully relieved of his symptoms. He is carrying on his vocation with full responsibilities. He still has his hypertension, usually 170/100. His electrocardiogram has always been normal, and it is normal now.

Case 3.—G. T., a retired minister, aged sixty-seven, came to me in October, 1937. He gave a history of having had an acute attack of coronary thrombosis three years previously and another attack of lesser severity one year later. He had been taking sedatives regularly and nitroglycerine sublingually, two to four times nearly every day, for about two years before calling on me. Any exertion or a rapid stride in his walking would bring on chest tightness and pain. A diagnosis of angina pectoris and coronary disease was made. After he was under my care for ten weeks, he too was taught breathing exercises. He continued with other medications as before. He called on me about once a week at first and later less often. It is now nearly ten years since he has taken any medication at all, and he states that he has "forgotten whether he has a heart or not." The improvement in this case also came on gradually, so that I was not aroused enough to attribute seriously the improvement in his cardiac trouble to respiratory exercises. However, later cases observed more carefully and a search through the literature have caused me to think that there could be respiratory techniques or exercises for easing cardiac distress.

Case 4.—On August 1, 1943, A. F., aged fifty-three, became suddenly very ill. He was apparently well up to the moment of his sudden attack. While he was listening to the radio newscast at 8:00 a.m. that the American troops were landing on one of the Aleutian Islands, he suddenly became aware of severe pain at the left of the upper end of his sternum. This became progressively worse. Within a few minutes he was covered with profuse perspiration and became ashen grey in color. He was given a hypodermic injection of ¼ grain of morphine which only relieved him partially. He was put to bed promptly. At 10:00 a.m. he took ¼ grain of morphine by mouth, and at 1:00 p.m. he was given papaverin hydrochloride, 3 grains intravenously. He ran an elevated temperature of about 101.4° for five days. His sedimentation rate was 26 mm. in sixty minutes. His leukocyte count was 14,000. His electrocardiogram showed myocardial damage (Fig. 1).

He was confined to bed for over six weeks. The consultant cardiologist at first thought that his prognosis was rather poor. The diagnosis was coronary thrombosis with myocardial damage.

quality, and no thrill, murmur or friction rub was elicited. The blood pressure was 136/82.

On the mere suspicion of a possible heart involvement, this patient was kept in bed for a few days. On

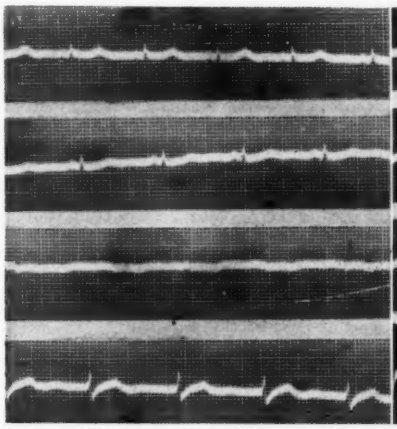

Fig. 2 (Case 5). Electrocardiogram taken in June, 1946, interpreted as within normal limits except for showing a low potential in all leads.

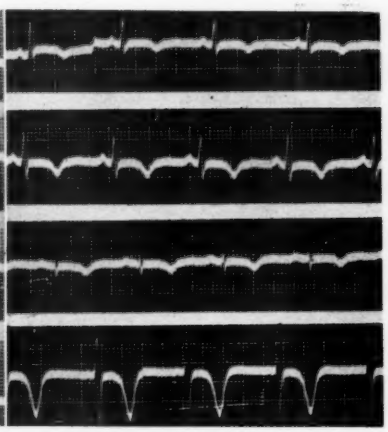

Fig. 3 (Case 5). Electrocardiogram taken six months later showing negative T waves in all leads, not present in Figure 2 and indicating considerable myocardial damage.

This patient was given morphine when he needed it the first five days. He took aminophylline, 3 grains three times a day, for about a month. This patient could not turn on his left side for a long time after his acute attack. He claimed that he became aware of palpitation and the heart would skip a beat now and then if he turned on his left side. He was left rather weakened, and could not do much at first in the early weeks of his recovery without bringing on some tightness and pain in his chest. He could not walk his usual gait without causing chest tightness and pain. He was taught attentive breathing exercises on the tenth week of his ailment. He volunteered the information shortly afterwards that turning his attention to "proper breathing" soon removed his chest pain. To date, this patient is back to his full duties, although he restricts his activities somewhat as a precautionary measure. He attributes his well being to the practice of "attentive breathing" a few short moments several times each day.

Case 5.—R. K., a housewife, aged thirty-eight, had her first attack of chest tightness and pain on June 8, 1946, when she suddenly felt severe pains in her left upper chest, which lasted over a half hour. By the time I saw her at her home, the pains had eased considerably and she felt rather tired out. A physical examination at the bedside did not reveal anything unusual. Her temperature, pulse and respiration were normal. The pulse rate was 80 and of good quality. The physical examination was essentially negative. The lung examination revealed normal breath sounds throughout the chest. No areas of dullness and no râles were found. The heart tones were of good

June 28, 1946, she came into the office. Her physical findings were the same except that the blood pressure was 150/100, the hemoglobin was 75 per cent, the red blood cell count was 3,750,000, the leukocyte count was 11,200 and the sedimentation rate was 20 mm. in sixty minutes. The electrocardiogram (Fig. 2) revealed a low potential in all leads but otherwise was interpreted as within normal limits. On November 12, 1945, she came in complaining of pain in the stomach that came on at irregular intervals, and she stated that often if the pain lasted a while, it would then radiate to her chest, producing a tightness around the heart and some difficulty in breathing. X-ray studies of the gastrointestinal tract, including a barium enema of the colon, proved to be negative. A 6-foot chest plate revealed normal heart and lung shadows. The blood examination revealed a sedimentation rate of 35 mm. in sixty minutes. Her hemoglobin was 82 per cent, red blood cell count was 4,100,000 and leukocyte count was 9,550.

This patient went to Florida in December, and on her return trip she had another attack of severe chest pain in a hotel lobby, for which she was given a hypodermic injection by a physician.

On January 8, 1947, she came in complaining of frequent feelings of chest tightness, some pain and dyspnea on exertion. The electrocardiogram now (Fig. 3) showed a negative T wave in all leads, evidently indicative of considerable myocardial damage. This patient was kept at bed rest for two weeks, and after that she was allowed to be up but her home duties were restricted considerably.

Her past history may have been contributory to her recent ailment. She had had considerable upper respiratory difficulty. She had had three miscarriages, two

of them self-induced. In October, 1935, she went into labor at term and developed eclampsia. Her blood pressure went up to 200/120 from 126/84 within two hours. She had several convulsions and remained unconscious for twelve hours until she was delivered of a stillborn fetus whose cord was tightly wound four times around its neck. She made an uneventful recovery, and her blood pressure returned to her previous normal. However, her previous occasional headaches became much worse after this pregnancy. She was actually confined to bed for two or three days every month during her menstrual period due to "migraine" headaches. On July 24, 1937, she delivered a normal baby girl following a normal pregnancy and delivery. A few months after this delivery she again resumed having her headaches at irregular intervals. In June, 1939, she had a cholecystectomy and a left-side oöphorectomy.

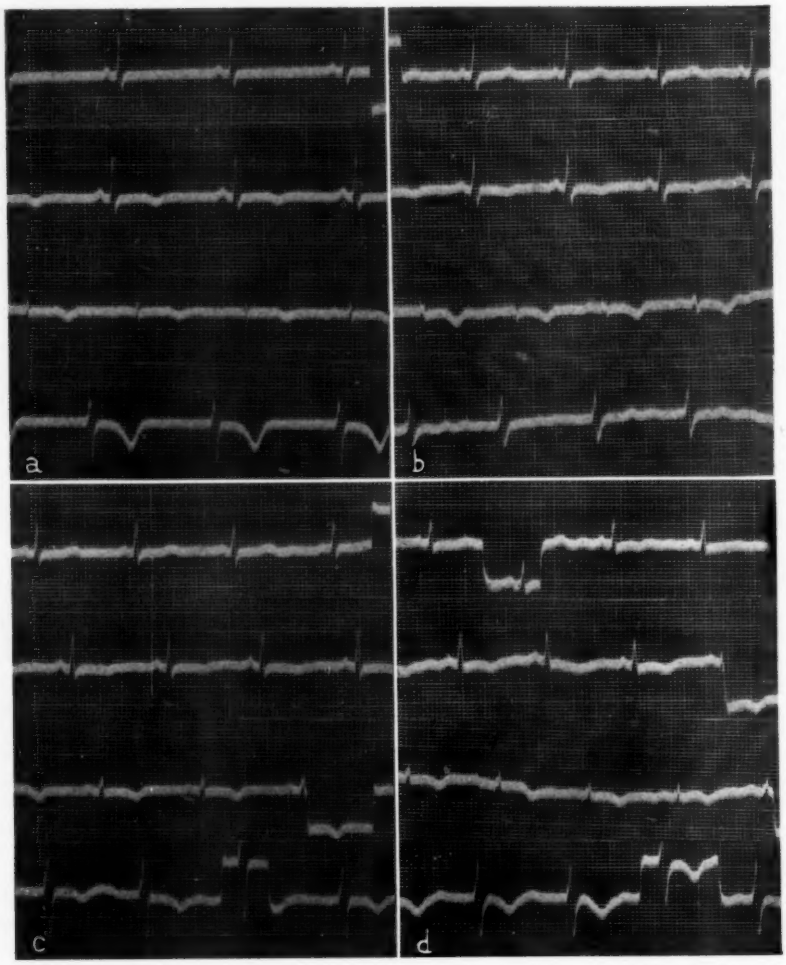

Fig. 4 (Case 5). Electrocardiograms taken (a) March 8, (b) March 13, (c) March 24, and (d) April 7, 1947, showing progression of myocardial disease.

On March 7, 1947, at about 8:00 p.m. following moderate exertion she suffered a very severe heart attack. The chest pain and tightness was very severe. Her dypsnea was very marked. She complained constantly that there was no air in the room. She was given an injection of ¼ grain of morphine and was hospitalized promptly and placed in an oxygen tent. A diagnosis was made of coronary thrombosis. Her progress in the hospital was rather poor at first. She had four acute attacks during her hospital stay. Her electrocardiogram on March 8, 13, 24 and April 7 all showed evidence of myocardial damage indicating progression of coronary disease (Fig. 4, a, b, c, d). Her sedimentation rate was 35 mm. in sixty minutes. The leukocyte count was 11,000. The patient was given dicumarol and other usual medications. She had a difficult time for over four weeks. Later, she too was taught to practice attentive breathing several times a

day. From observing her carefully, I believe it has contributed to the relief of her symptoms.

Six more cases of angina pectoris which were relieved of their symptoms by attentive respiration were briefly as follows:

Case 6.—H.R.S., male, aged fifty-nine. The established diagnosis after a careful examination was angina pectoris and mild diabetes. Length of observation was six years; and practicing attentive respiration for two years afforded him relief from symptoms.

Case 7.—E. F. S., male, aged fifty-six. The diagnosis was (1) angina pectoris following an attack of acute coronary thrombosis on July 16, 1943; (2) diabetes, diagnosed in 1939, requiring a daily dose of 45 units of insulin; and (3) hypertension with a blood pressure variation of 190 to 170 millimeters of mercury systolic and 110 to 100 millimeters diastolic. This patient had considerable anginal symptoms following his acute coronary episode. He was started on exercises of attentive respiration four months after his attack and he gradually obtained relief from his symptoms. He died September 5, 1947, following a cerebral hemorrhage and pulmonary thrombosis; however, in the interim he had obtained relief from anginal symptoms apparently through practicing attentive respiration and frequent short rest periods.

Case 8.—Mrs. B. R., female, aged forty-seven. Diagnosis was angina pectoris. The length of observation was three years. She has been practicing attentive respiration with absence of anginal symptoms for two years.

Case 9.—Mrs. M. S., female, aged fifty-two. The diagnosis was angina pectoris for the duration of two years. She obtained relief from her symptoms practicing attentive respiration for one year.

Case 10.—Mrs. M. O'B., female, aged seventy-one. The diagnosis was hypertension and angina pectoris. Her blood pressure was usually about 220 millimeters of mercury systolic and 120 diastolic. She obtained relief from symptoms by means of attentive respiration over a period of one year.

Case 11.—Mrs. M. F., female, aged sixty-five. She had suffered from hypertension for over ten years and was under my care for one year. The blood pressure reading varied between 260/130 and 210/124 millimeters of mercury. She had marked heart enlargement and anginal symptoms. She obtained relief from anginal symptoms by practicing attentive respiration exercises during a period of one year.

Discussion

The rationale for the help obtained from attentive breathing may well be attributed to the following considerations:

1. Potts,[23] Blair, Bell,[3] Falk[7] and others have called attention to therapeutic values obtained from breathing exercises in coronary thrombosis and pulmonary embolism.

2. According to Negovski,[19] the heart is one of two body organs that has "greatest recuperative power of all body organs." Attentive respiration probably affords favorable conditions for the recuperating heart, as I shall try to show later.

3. Macklin[17] has shown that during inhalation the blood vessels in the lungs not only lengthen but they also widen in caliber, thus increasing the blood vessel volume in the lungs, so that the blood is better areated. Undoubtedly it is for that reason that the editorial writer of the American Medical Association[6] calls the lungs "the secondary heart." Hence, increased inhalation time obtained in attentive breathing may be of value for a recuperating heart.

4. As one of the factors contributing to the possible values in attentive respiration, I wonder if the lungs may not have a massaging action upon the myocardium during inhalation when the lungs expand with air. Haldane,[12] in his book *Respiration,* states: "We bethought ourselves of some anatomical observations collected by Professor Arthur Keith in *Further Advanced in Physiology,* edited by Professor Leonard Hill, 1909. He showed in this essay that during inspiration the lungs do not expand equally and simultaneously at all parts, but open out part by part somewhat like the opening of a lady's fan. The parts nearest the moving chest walls (for distance, the diaphragm) expand first, and other parts follow." In diaphragmatic breathing we may well have expansion of the lungs from below upward toward the apices of the lungs, and in such lung distention there may be a massaging action upon the heart from its apex toward the base of the heart or a massaging action along the course of the coronary veins. When I watched patients in attentive breathing during relaxation, it seemed to me that they were doing diaphragmatic breathing, which may be of benefit by this apparent massaging action.

5. The lengthened time element and the reduced respiratory rate may be valuable factors to be considered in the help obtained from attentive breathing. Normal respiratory rates are usually considered to vary from about sixteen to twenty per minute. During inspiration the lung

tissues stretch and the stretching stimulates the vagus nerve.[2] However, H. R. (Case 2) has so well mastered his respiration while at rest that he breathes about three times per minute (Fig. 5) and very often I have observed him breathing only two times per minute, which means that the average duration of each respiratory phase was 10 to 15 seconds. All this brings to mind statements of August Krogh[14] as a result of his own work and that of others, that there is a latent period of between 4.6 and 8 seconds for the reaction of the autonomic nervous system, while A. J. Clark[4] claims the latent period to be 15 seconds. At any rate when the respiratory rate is not interfered with by the voluntary nervous system and is only two per minute, which means 15 seconds per respiratory phase, it is possible that more nerve endings will respond to the stretch stimulus than when the respiratory rate is 20 per minute, which means 1⅓ seconds per respiratory phase. When the nerve endings of the parasympathetic are stimulated,[2,4,10,11,16] acetylcholine is produced, which according to August Krogh[14] and A. J. Clark[4] constitutes a relaxant to the muscular layers of the blood vessels of the cholinergic system. But the acetylcholine thus produced at the nerve endings has but a brief moment for effective work, for acetylcholine is quickly destroyed by cholinesterase[11] that is present everywhere in the tissue. Hence, the longer inhalation period probably affords more acetylcholine production and smooth muscle relaxation. Also the increased acidity of inhalation following a lengthened exhalation counteracts the cholinesterase function[10,14] as will be shown later.

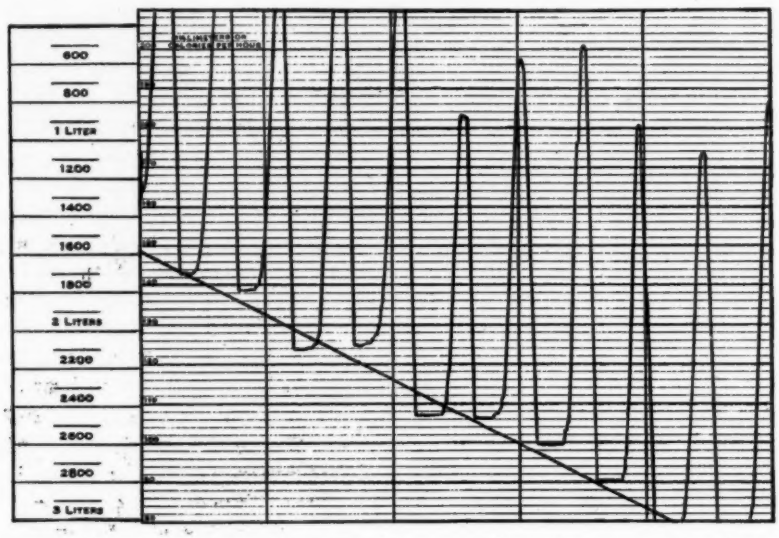

Fig. 5 (Case 2). Respiration chart illustrating an automatic respiratory rate of less than 3 per minute.

According to VanSlyke and others,[26] respiraton has a definite influence on the acid-alkaline balance of the living organism. The hydrogen ion concentration of the blood averages pH 7.4, but it fluctuates with respiration. During inhalation it becomes more acid, and the pH may go to 7.1, and during exhalation, when carbon dioxide is blown off, the blood becomes more alkaline, and it may reach a maximum of pH 7.8. The fluctuations in the acid-alkaline balance are less with shallower breathing. Otto Loewi,[16] Gesell, Brassfield and Hamilton,[9] Stella,[25] Clark[4] and others have shown that acetylcholine production is more favored by an increased amount of carbon dioxide in the inspired air. Now, when the respiratory rate is slower and deeper, the expired air will naturally have a greater percentage of carbon dioxide at the end of expiration.[22] So that on the following inhalation more carbon dioxide will be returned from the residual air space, thus favoring acetylcholine production. Gesell and Hansen[11] state, "An acid-moderating mechanism is built into the very foundation of nervous integration." Nechels and Gerard[18] state, "Exposing a stretch of nerve to carbon dioxide causes a marked

increase of total action potential up to five times the initial values." From the work of Gesell and Hansen,[11] and Nechels and Gerard,[18] it could be surmised that on inspiration, after a slow and lengthened expiration, the vagal nerve endings are being stretched and stimulated more in the presence of a greater amount of carbon dioxide than in shallow breathing, which in turn means a greater production of acetylcholine and a greater inhibiting action upon cholinesterase by increased acidity.

6. The improvement in the arterial oxygen saturation that comes from slow deep breathing is undoubtedly another favorable factor in attentive breathing. Comroe and Dripps[5] show that during inhalation the average alveolar oxygen pressure is 105 millimeters of mercury while during exhalation the average alveolar oxygen tension is 95 millimeters of mercury. A lengthened time interval for the higher alveolar oxygen tension is undoubtedly of value in supplying oxygen.

Best and Taylor[2] discussing shallow breathing and deep breathing indicate that arterial oxygen saturation is favored by slow deep breathing, rather than shallow rapid breathing, despite the fact that the minute volume of air breathed by shallow rapid breathing is greater than the minute volume of slow deep breathing.

Barach, Fenn, Ferris and Schmidt[1] in their work on "The Physiology of Pressure Breathing" show among other things that "a lowering of carbon dioxide pressure is advantageous because it permits the arterial blood to take up more oxygen in the lungs at the same oxygen pressure." It is evident that both intravenous and alveolar carbon dioxide pressure continue to fall during exhalation. For, as Best and Taylor[2] indicate, carbon dioxide is eliminated very quickly since the tissue permeability for carbon dioxide is thirty times that of oxygen; and of course a lowering of carbon dioxide alveolar pressure is obtained when exhalation is more complete and lengthened, while muscle tensions are consciously relaxed. All this seems to indicate that automatic slow respiration, both in the inhalation and exhalation phases, may reasonably be of value in the relief of symptoms in angina pectoris.

Conclusion

Attentive respiration was utilized as an adjunct in the treatment of eleven cases of angina pectoris, apparently contributing in their relief of symptoms.

I wish to express my thanks to Dr. George Fahr for his criticism.

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EARLY AMBULATION: CLINICAL RESULTS AND PREREQUISITES

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SINCE 1944 we have adopted the plan of early postoperative rising for our surgical patients. This practice is now so widely used that a review of the literature leading to this decision would be repetitious, particularly with the recent appearance of a monograph by D. J. Leithauser,[11] who is generally credited with repopularizing the procedure in this country. In fact, his bibliography lists 126 references for the history of early ambulation up to 1945; interest in this subject has resulted in additional papers since 1945.

The purpose of this presentation is to give our clinical results with this technique, to compare these results with a control series, and to discuss the principles of preoperative and postoperative care, which we feel must be mastered before properly applying this method.

Between the years of 1944 and 1947, 250 consecutive patients were selected who had been operated on for one of five different standard surgical procedures: gastric resection, colon resection cholecystectomy, hysterectomy, and herniorrhaphy. These procedures were selected because they represented varying degrees of surgical trauma. For purposes of comparison an equally distributed consecutive series of patients operated upon between 1939 and 1943 were studied as an example of late ambulation.

Clinical Results

Figures 1 to 5 illustrate the day of ambulation and the type of complication occurring with the entire group of 500 patients. The results will be compared first for each type of surgical procedure and then for the group as a whole.

Gastric Resection.—(Fig. 1) Fourteen complications occurred in fifty gastrectomies performed during the era of delayed ambulation. Four of these resulted in death. Of the nonfatal complications, thrombophlebitis and bronchopneumonia (probably atelectatic) were the most common. There were five complications in fifty gastric resections performed during the period of early postoperative rising without any deaths. Pulmonary complications were the most frequent ones seen.

Colon Resection.—(Fig. 2) In fifty patients of this group kept in bed for varying periods postoperatively, there were sixteen complications with seven deaths. Death was due most often to postoperative pneumonia. Another frequent complication in this period was wound infection. Of fifty patients resected during the recent period of earlier ambulation, there were twelve complications with one death. Pneumonia was a frequent postoperative complication but it was less often fatal. For unexplainable reasons, cystitis was seen more frequently in the latter period.

Cholecystectomy.—(Fig. 3) There were fourteen complications in fifty cholecystectomized patients allowed to remain in bed postoperatively; one of these resulted in a fatality. Abdominal distention was noted frequently as a postoperative complication. Of the parallel group of patients ambulated early after cholecystectomy, the only complication noted was a nonfatal postoperative pneumonia in one patient.

Hysterectomy.—(Fig. 4) In the group allowed prolonged bed rest after hysterectomy, there were five complications whereas in the group encouraged to ambulate early there were none. There were not enough complications of any one type to indicate a trend. There were no deaths in either group.

Herniorrhaphy.—(Fig. 5) The majority of these were of the inguinal type in which operation was performed under spinal anesthesia. There were six complications in the fifty patients treated by late rising and four complications in the fifty patients obliged to rise early. There were no deaths in either group.

Influence on Postoperative Temperature and Hospitalization.—A shorter and lessened febrile period has been described for the patient who

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Presented before the Saint Paul Surgical Society, April 26, 1947, Saint Paul, Minnesota.

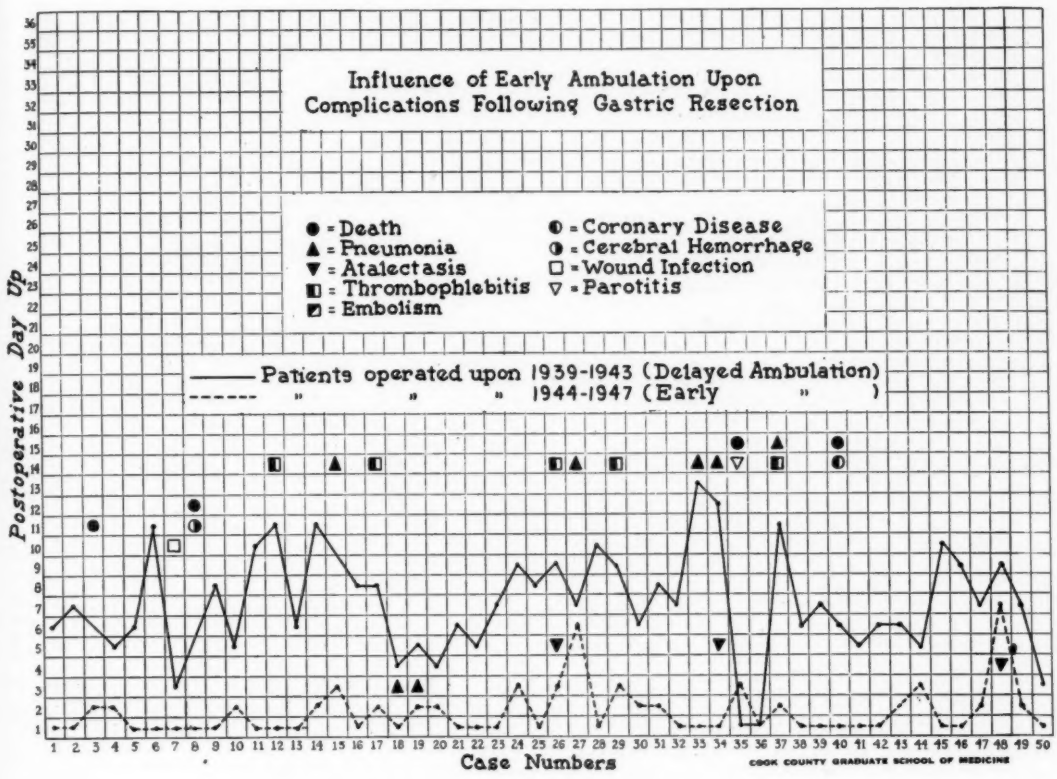

Fig. 1.

has ambulated early.[18] Our own series indicates a decrease in the average maximal postoperative temperature from 0.4° to 1.2° F. (Table I).

A shortened period of hospitalization would be anticipated as a result of early ambulation. Considering the individual surgical procedure it was found that following gastric resection, the early ambulated patient left the hospital on an average of 2 days earlier. 3.1 days earlier after colon resection, 5 days earlier after cholecystectomy, 2.7 days earlier after hysterectomy, and 2.4 days earlier after herniorrhaphy. In each instance all sutures were removed before discharge, and no patient was permitted to go home in the presence of a complication.

TABLE I. INFLUENCE OF EARLY AMBULATION UPON POSTOPERATIVE TEMPERATURES AND PERIOD OF HOSPITALIZATION

Operation	Number of Patients	Average Maximum Postoperative Temperature	Average Postoperative Hospital Discharge Day
Cholecystectomy			
Group I	50	102.2	14
Group II	50	101	9
Colon Resection			
Group I	50	102.2	24.7
Group II	50	101.8	21.6
Gastric Resection			
Group I	50	102.6	14
Group II	50	102	12
Hysterectomy			
Group I	50	101.4	12.6
Group II	50	100.8	9.9
Herniorrhaphy			
Group I	50	100.6	11.1
Group II	50	100	8.7

Group I: Operated upon 1939-1943—Delayed ambulation.
Group II: Operated upon 1944-1947— Early ambulation.

Total Complications.—In Table II total complications are aggregated for the 500 patients. A total of ninety-eight complications in 500 operations was experienced, of which twenty-eight occurred in the group ambulated early and seventy in the group ambulated late. This means that 11.2 per cent of the patients treated by early ambulation experienced complications whereas 28 per cent of those treated with late rising had such complications.

Considering the individual complication, it was found that out of thirteen deaths in the group of 500 operations, all but one occurred in patients

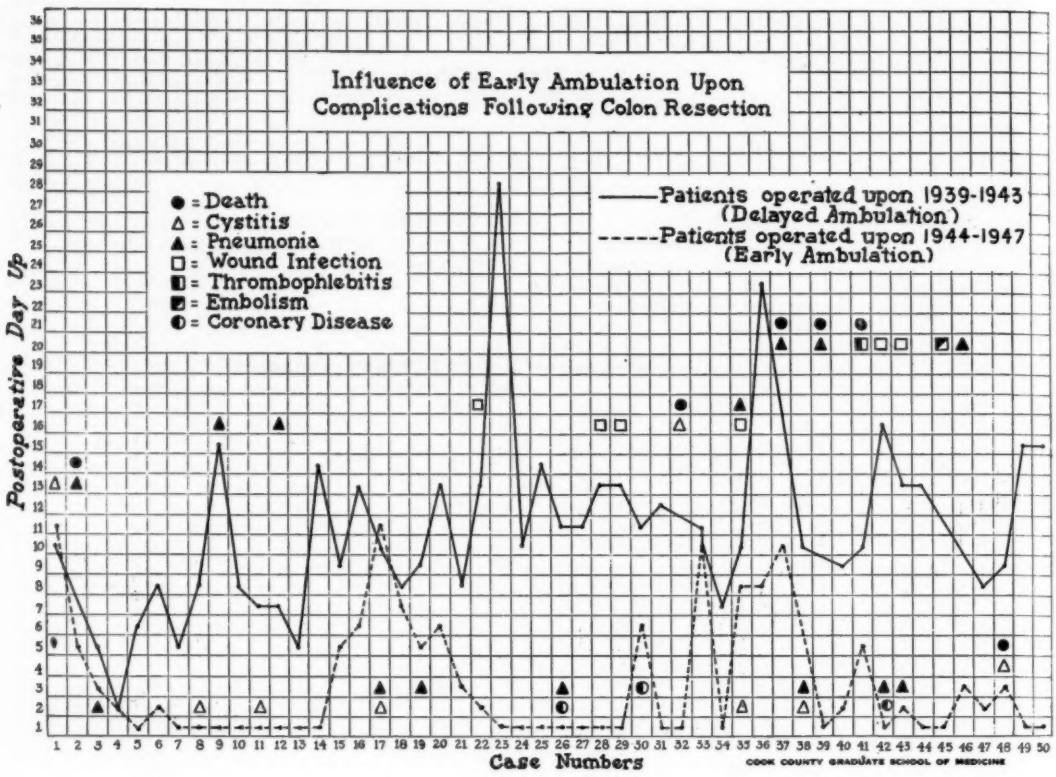

Fig. 2.

TABLE II. INCIDENCE OF COMPLICATIONS IN 250 PATIENTS TREATED BY EARLY AND LATE AMBULATION AFTER OPERATION

	Early Ambulation	Late Ambulation
Deaths	1	12
Pneumonia	10	16
Atelectases	3	3
Abscesses	0	2
Wound Infections	0	8
Thrombophlebitis	0	7
Cystitis	6	5
Pulmonary Embolism	0	1
Abdominal Distention	1	9
Bronchitis	3	1
Miscellaneous	4	6
Total Number of Complications	28	70
Percentage	11.2%	28.0%

who were detained in bed after the operation. Pneumonia occurred not only more often in the late risers but it was more often fatal. Postoperative infections, thrombophlebitis, and distention were seem more frequently in the group remaining in bed after operation. No significant difference in the incidence of atelectasis or cystitis could be discerned.

In the evaluation of these differences one might question whether or not changes in postoperative care might be a factor. While it is true that antibiotic therapy was introduced during the latter period of early ambulation, sulfonamides were available to the previous group, and blood transfusions and intestinal siphonage was available to both. Although it can be reasonably assumed that this change in chemotherapy may have well resulted in a lowered incidence of fatal pneumonia and serious postoperative infections, it would not adequately explain all the differences seen.

Surgical Prerequisites for Early Ambulation

As every paper on early ambulation hurriedly confesses, early ambulation is *not* a new procedure, and Emil Riese of Chicago is given credit for first reporting this procedure in 1899.[17] However, with few exceptions, the entire plan soon fell into disrepute in this country, but it continued to be practiced widely on the continent. The present revival has met with significant success,

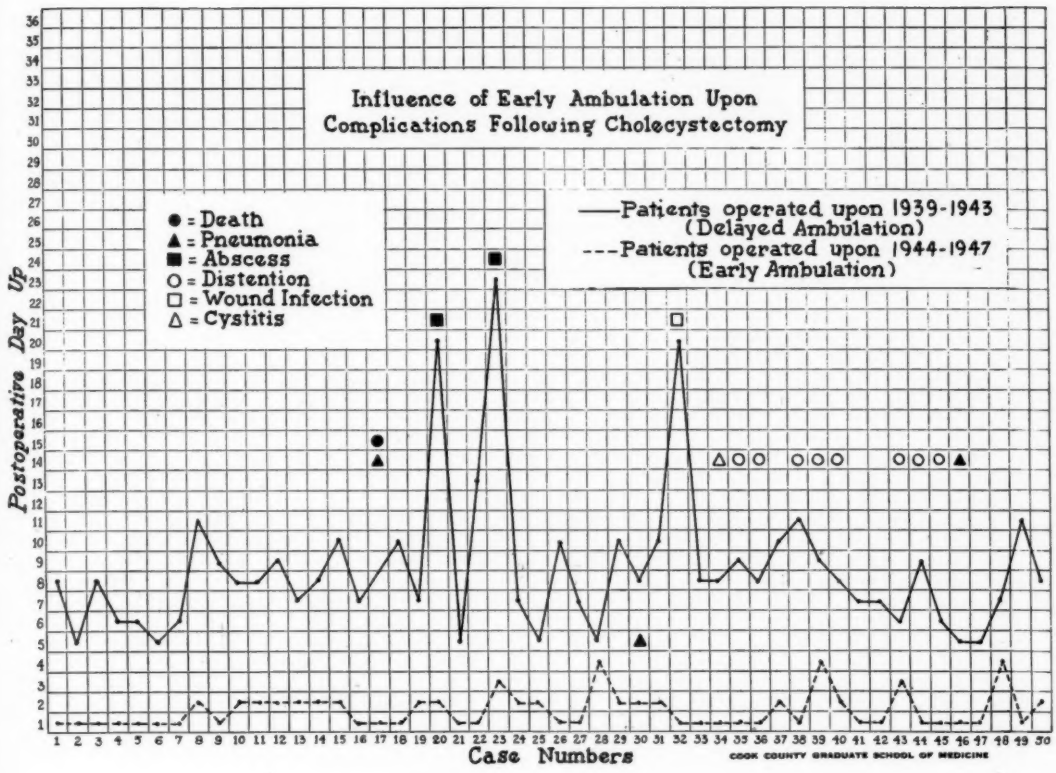

Fig. 3.

and if it continues to be so we believe it will be because of the application of sound physiological principles in preoperative and postoperative care. We consider the following ten principles as requirements to be fulfilled in the main before embarking upon this plan.

1. *Correction of dehydration* is paramount. Dehydration exists in a variety of surgical diseases, particularly in the presence of obstructing lesions of the gastrointestinal tract, diarrhea, fistulas, peritonities, burns and draining wounds.

In the presence of dehydration, there is a marked reduction in the plasma volume which leads to the development of shock. This reduction in the plasma volume also entails reduction in urinary excretion, with a consequent retention of nitrogen waste products. A decreased plasma volume affects the function of such important viscera as the liver, brain and the heart, any of which will render the patient a poor surgical risk.

The correction of dehydration implies the administration of water containing salt, carbohydrates and protein. This can be accomplished most rapidly by the intravenous route. The quantities to be administered will obviously vary with each disease and patient, but one of the best guides is the urinary output. For many years clinicians have recognized that operating on a patient with an inadequate urinary output is associated with a formidable mortality.

2. *Correction of vitamin deficiencies* seen in surgical patients involves primarily the crystalline, water-soluble vitamins B and C. This deficiency results because of the fact that there is no storage for these vitamins in the body and that a multitude of situations may occur in the surgical patient which will increase the excretion or loss of these vitamins. Among these conditions are sepsis, increased metabolism, jaundice, vomiting, diarrhea and intestinal fistulas. Added to this burden of a depleted vitamin reserve is the problem of the increased vitamin requirement. Phys-

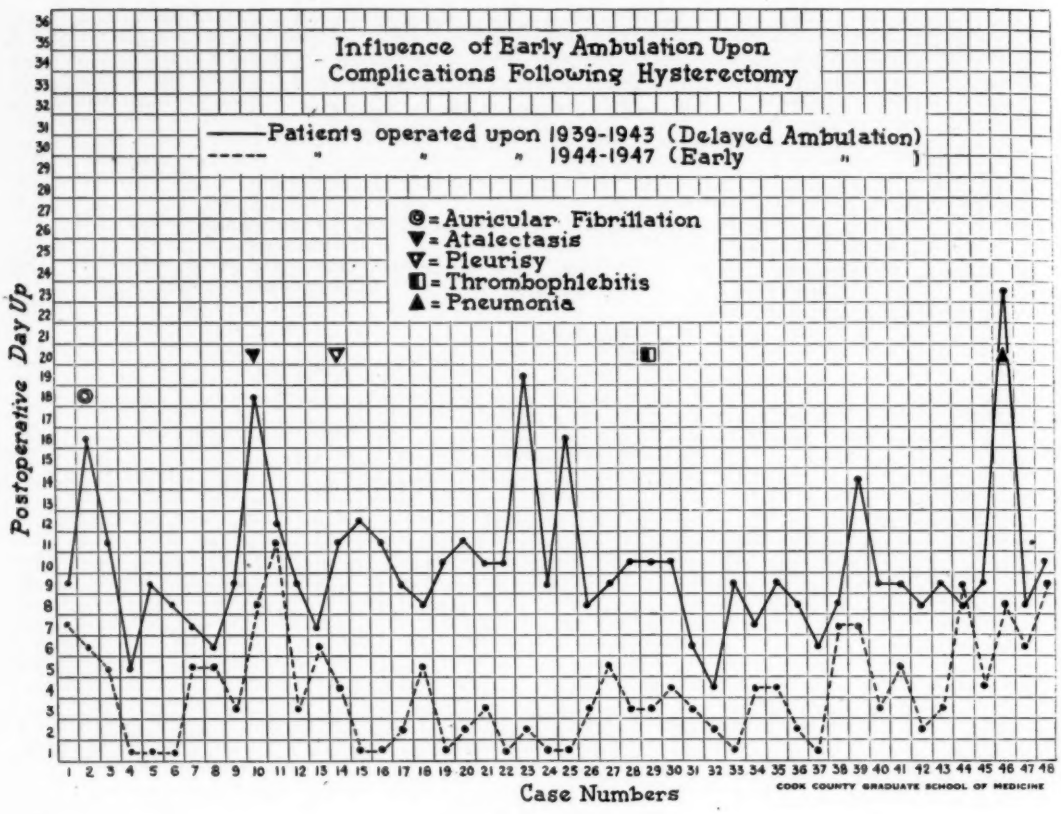

Fig. 4.

iologists are now agreed that thiamin, riboflavin and niacin are essential in carbohydrate metabolism. The experimental work on wound healing has conclusively shown that ascorbic acid is essential to the production of intracellular collagen between fibroblasts. The necessity for vitamin K in the synthesis of prothrombin by the liver is an outstanding contribution of the past decade. Fortunately, all of these vitamin deficiencies can be quickly rectified by the availability of a potent crystalline vitamin for intravenous use. They are to be included in any program wherein intravenous or subcutaneous fluids are required.

3. *Correction of protein deficiencies.*—The importance of protein metabolism was first recognized by surgeons who perforce were made cognizant of it by virtue of the fact that if the protein deficiency did not exist before operation it would only become aggravated after the operation. We have come to recognize that laboratory methods alone are inadequate for the recognition of this protein deficiency; for example, dehydration or infection could produce both a false elevation in the serum globulin fraction of the protein and therefore a falsely elevated total protein. We are also cognizant of the inaccuracies of many methods for determining blood proteins. Actually, the only accurate means at hand would be to determine the plasma volume by the injection of a dye together with the protein concentration. However, this method requires rather elaborate laboratory facilities and is not applicable to routine clinical use. From the clinical standpoint, the surgeon must learn to anticipate protein deficiency without the benefit of biochemical methods. We have taught therefore that hypoproteinemia can be assumed to exist in any surgical disease characterized by:

(a) Decreased intake of protein, such as from dietary restrictions and obstructions of the esophagus and pylorus.

(b) Decreased absorption of protein, such as

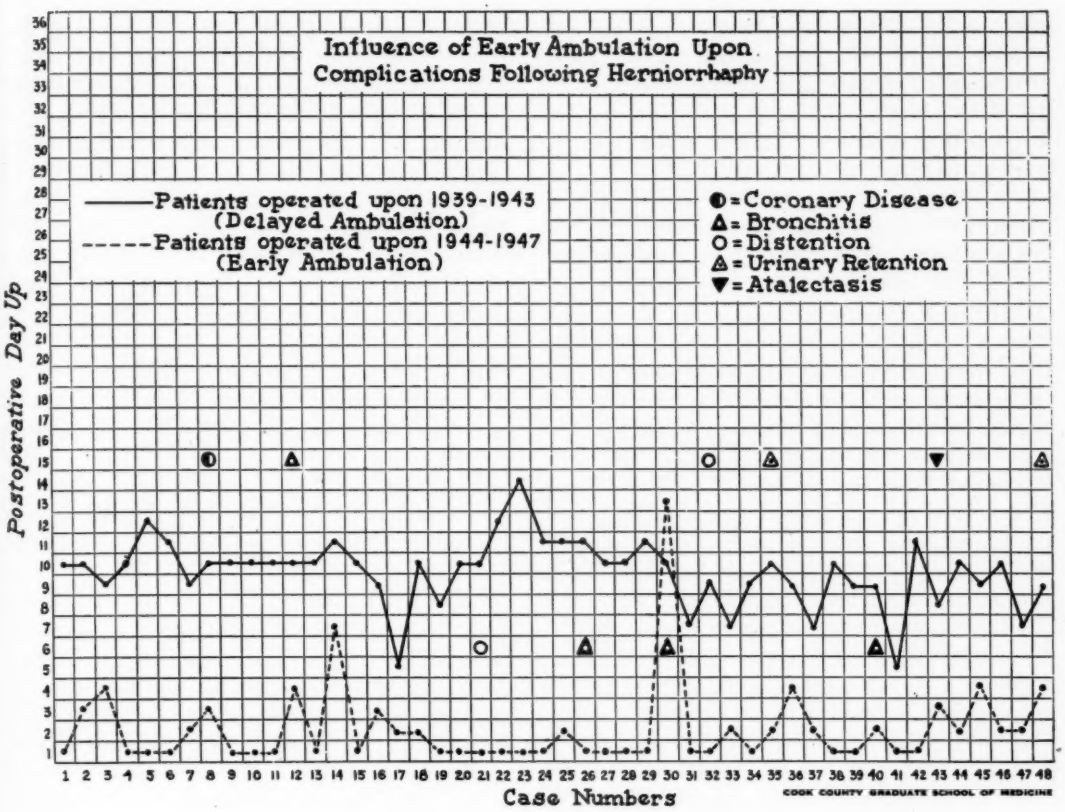

Fig. 5.

from any ulcerations of the gastrointestinal tract, carcinoma, obstructions or fistulas.

(c) Decreased synthesis of protein, such as from any of the various types of liver damage seen in icterus, cirrhosis and hepatitis. It is commonly agreed that the liver is the most important site for the synthesis of serum albumin.

(d) Increased loss of protein, which is particularly characteristic of surgical diseases such as burns, hemorrhage, peritonitis, abscesses, empyemas, diarrheas, vomiting, et cetera.

(e) Increased requirements for protein, such as in any fevers, hyperthyroidism and pregnancy.

The correction of protein deficiencies can be accomplished by one of four means:

(a) *Oral protein* which is still the simplest, the least expensive and the most widely applicable. If relying upon natural foods for sources of protein, one can augment this by insisting upon six feedings a day spaced through the twenty-four-hour period instead of the three meals a day conventionally given within a ten-hour period. In many instances the use of natural protein limits the quantity ingestable because of bulk. These can be supplemented by various digests now available, some of these being more palatable than others.

(b) The second method of correcting protein deficiencies involves the use of parenteral amino acids. Since the original report, barely ten years ago, a large number of casein digests have been developed for intravenous use which are safe, well tolerated and capable of producing positive nitrogen balance. It is important to remember that these solutions have to be well protected by carbohydrate intake lest they be used as a source of calories. It is also worth noting that the quantities of amino acids necessary to produce the desired results exceed those generally recommended.

We have found that serum protein levels frequently do not reflect the improvement, and prob-

ably weight gain is as good a criterion as any. Whenever possible, intravenous amino acids should only be relied upon to supplement protein taken by mouth. However, when oral feeding is impossible, this means may prove to be a life-saving measure.

(c) The use of plasma has now been largely given up because it has been found to be far too expensive a means of correcting protein deficiency. It has been found that approximately 2,000 c.c. of plasma would be necessary to produce a rise of the protein of 1 gm. per 100 c.c. This would be formidable from the point of view of replacement and purchase. We have found plasma protein usually produces a fall in protein concentration rather than a rise and have reserved the use of plasma chiefly for emergency treatment of shock and burns. The incidence of homologous serum jaundice attributable to pooled plasma has more recently led to its disuse except in the most dire circumstances.

(d) The use of whole citrated blood has delighted us with its clinical effectiveness. We administer here not only some 18 gm. of plasma protein with each unit, but also 75 gm. of hemoglobin and many other factors concerned with resistance to infection. So convinced have we become of the efficacy of blood transfusions in the management of the surgical patient that we have made it a dogmatic ruling to precede all of our major gastrointestinal surgery with a minimum of 2,000 c.c. of whole blood. This we prefer to have administered before operation when the patient's metabolism is such as to take fuller advantage of it.

Good clinical judgment for the preparation of the patient for elective surgery would be to combine the use of oral protein with intravenous amino acids and whole blood transfusions. This we have found most practical, for here we have a means of correcting tissue protein and circulatory protein losses.

4. *Correction of anemia.*—An underlying anemia probably exists more often than we are capable of recognizing. In many instances of hemorrhage, there is a compensatory dehydration which will falsely elevate the blood count just as it may falsely produce a rise in the serum globulin. Such a situation is frequently demonstrated by repeating the blood count or hematocrit after the administration of fluids. The presence of anemia demands even more frequent transfusions of whole blood than when there is plasma protein deficiency alone. We know of no criteria for determining the quantity of blood that will be necessary. On the other hand, we know of no reason for limiting the number of transfusions. Therefore, the quantity of blood to be administered to the anemic patient is that amount which will produce a satisfactory blood picture and clinical condition, whether this means one or twenty transfusions.

5. *The use of transverse incisions* is to be preferred to vertical incisions in patients in whom early ambulation is contemplated. The reason for this is that the transverse incision has a lower incidence of evisceration, nerve destruction and herniation. Although this point cannot always be followed, the principle is nevertheless a good one.

6. The use of *interrupted sutures* we consider important in this program, whether it concerns the wound or a gastrointestinal anastomosis. By this means we believe the lines of tension are more equally distributed and there is less narrowing of the lumen. We consider the use of interrupted sutures of more importance than the type of suture used.

7. The use of *permanent sutures* would seem to have a definite advantage, in that they produce less tissue reaction than catgut sutures, attain a maximum tissue strength which is maintained indefinitely and are less apt to become infected. We have preferred silk and stainless steel wire. Others prefer cotton. We are quite interested in the fact that quite a number of men who practice early ambulation have done so with the use of catgut sutures in the wound.[18]

8. *Wound infections are cautiously avoided,* and this usually implies the avoidance of trauma and hematoma. In operations such as those on acute gangrenous appendices with soilage, we have found very helpful the insertion of a drain down to but not through the peritoneum as a means of minimizing wound infections.

The need for chemotherapy in some of these patients does not necessarily mean discontinuation of the early ambulation program. Although sulfonamides still have a place in chemothera-

peusis, we prefer at present in most laparotomies a course of penicillin medication whenever an actual infection exists or prophylactically. In the colon surgery cases the nonabsorbable sulfonamides—sulfasuxidine or sulfathalidine—are used in conjunction with penicillin because of their local bacteriostatic effect. No sufficient data for the specific need of streptomycin in some of these cases have as yet been obtained. We found 20,000 units of penicillin at three-hour intervals to be a sufficiently large dose for most of the patients in our series. In some instances, a larger dose than 20,000 units of penicillin might be necessary, but this is best determined by running a sensitivity test on the causative organism.

9. *Patients should be informed* before operation that they are to be ambulated early. This will allay apprehension, procure better co-operation, and make the patient more interested in his convalescence.

10. *The choice of anesthetic* is important, and wherever possible we prefer spinal anesthesia because it provides us with a more co-operative patient.

Advantages of Early Ambulation

The results of early ambulation as reported from many independent sources can now be determined from the observation of several thousand patients; the criteria for evaluation are clinical, with only a few animal experimentations to support such observations. However, the accumulated data are so unanimously in favor of early rising that a consideration of these advantages, even in the present theoretical stage, probably has much to support it.

Decreased pulmonary complications could be anticipated, for as Cutler and Hoerr[5] point out, 50 per cent of postoperative pneumonic complications occur in the first twenty-four hours, and 90 per cent within the first four days. If, as we now believe, the majority of these are atelectatic originally, then any maneuver which improves the cough reflex, the expectoration of mucus, an increased vital capacity and lung volume will minimize this complication. McMichael and McGibbons[14] have reported a 340 c.c. decrease in lung volume as a result of recumbency, and a 780 c.c. decrease in supplemental air as the result of elevation of the diaphragm. Churchill and McNeil[4] observed the effect of cholecystectomy and appendectomy upon the vital capacity in patients kept in bed after operation as was customary in 1927. Leithauser[10] repeated these studies in 1943 in patients with similar operations, but obliged them to ambulate early after operation. The diminution of vital capacity postoperatively was less in degree in Leithauser's series and the return to normal was materially hastened. Blodgett and Beattie[2] noted a decreased incidence of atelectasis from 6.3 per cent to 4.3 per cent as the result of instituting ambulation at the Peter Bent Brigham hospital. However, as noted by Leithauser,[11] not only early ambulation but hydration, medication, anesthesia, choice of incision, and distention are also factors in the production of atelectasis.

Decreased vascular complications appear to have considerable experimental evidence to support it. In dogs ambulated early there was a 250 per cent increase in the flow of blood from the inferior vena cava. Smith and Allen[19] noted a prolonged circulation time in bed-ridden postoperative patients by the second postoperative day, which is prolonged 50 per cent above preoperative controls by the tenth postoperative day. Actual decrease in circulation time from 1.5 to 4.5 seconds have been reported in patients following earlier ambulation. Bed rest tends to pool blood in pelvic and calf veins; rest in bed tends to collapse veins, especially if pillows are used, and this leads to intimal injury. Thus the combined influence of stasis and intimal damage are present precipitating thrombus formation. Further investigative evidence apropos of this phase of the problem is the observation of Snyder[20] that recumbency leads to a decreased cardiac output, and of Mayerson and Burch[13] that recumbency is associated with a venous pressure and blood volume deficit.

Clinical results are somewhat more equivocal. Dahl-Iverson[6] reported a drop in the incidence of phlebitis, thrombosis, and embolism from 3.5 per cent to 0.58 per cent with the institution of earlier ambulation. Von Jaschke[8] reported 300 patients treated by delayed ambulation with a 2 per cent incidence of thrombosis and a 1 per cent incidence of fatal emboli. In 387 patients treated by early rising, the incidence of thrombosis dropped to 0.5 per cent and there were

no fatalities from emboli. Blodgett and Beattie[2] found a rise in the incidence of phlebitis with early ambulation from 1.8 per cent to 3.2 per cent, but expressed doubt as to the value of their observation in view of the length of their series. Burch and Fisher[51] reported two fatal emboli in 2,827 individuals ambulated early, one on the tenth postoperative day and one on the sixty-seventh postoperative day. In our series there was a significant decrease in the incidence of thrombophlebitis as the result of earlier activity, but as to phlebothrombosis, we have not seen a decided trend. Possibly the prophylactic use of anticoagulants or femoral ligation may prove more decisive factors than the use of early rising.

Since the preparation of this paper we have seen two cases of fatal pulmonary embolus in patients ambulated early. One occurred in a patient who was treated with dicumarol for a phlebothrombosis following an abdomino-perineal resection. This produced massive bleeding from the perineal wound, and ten days after discontinuance of the dicumarol the patient expired from a pulmonary infarction. Another fatal episode occurred in a patient twenty days after the closure of a perforated carcinoma of the sigmoid which had produced a purulent peritonitis. This would indicate that the problem of thromboembolic disease is still a challenge.

Decreased wound complications seem to be characteristic of early ambulation. This is possible by virtue of the decreased lag period in the wounds healing under the influence of early walking which in turn is attributed to increased blood supply, more efficient lymphatic drainage, and less atrophy due to disuse. Newburger[15] found that the abdominal wounds of rats forced to exercise early attain a higher tensile strength earlier than did the control rats allowed to rest. Blodgett and Beattie[2] reported a drop in the incidence of wound infections from 5.7 per cent to 2.7 per cent as the result of ambulation, and of evisceration from 2.8 per cent to 1.1 per cent. Leithauser and Bergo[12] reported only one evisceration in 900 cases of early rising. A decreased incidence of postoperative hernia as the result of earlier ambulation has been noted by Powers,[16] Ashins,[1] Schafer and Dragstedt,[18] and Elman and Akin.[8]

Decreased postoperative fever both in degree and duration has been reported by D'Ingianni,[10] by Schafer and Dragstedt,[18] and was noted in our own series. The mechanism accountable for this is not apparent.

Fewer catheterizations might be anticipated and were so reported by D'Ingianni.[7] However, we have not seen a significant decline in our own experience.

Fewer hypodermics have been claimed.[7] Early rising is attended by a diminution in wound pain, which would therefore lead to the use of fewer analgesics.

Improved gastrointestinal function has been claimed and is manifested by an earlier return of appetite, fewer gas pains, less distention and ileus, need for fewer enemas, and a decreased period of postoperative starvation. A claim has also been made for fewer adhesions with earlier ambulation due to the more frequent change in the position of the viscera.

Decreased incidence of decubitus ulcers is logical because of the improved nutrition and earlier relief of pressure effects from continuous supine position.

Earlier return of strength and a sense of well-being is clearly manifested in the early rising patients. It is not unusal for a patient to shave himself three or four days after a gastric resection. The psychological advantage is worth attaining for the patient who gets out of bed early assumes that he is doing well, otherwise he would not be allowed out of bed.

Improved liver function and nitrogen balance has been reported for patients ambulated early after herniorrhaphy[20] compared to controls. Early ambulation did more for the attainment of a positive nitrogen balance than did a variety of methods for increasing nitrogen intake in bed-ridden patients.

Economic advantages of early ambulation are accrueable to the patient, the hospital, and the employer. The period of disability is lessened and, therefore, the financial deficit is minimized for the patient. The number of days of hospitalization after operation is materially decreased as is the amount of nursing care, thereby easing the problems confronting most hospitals throughout the country today. The earlier return of the

employee to productive efforts is a boon to industry.

Contraindications to Early Ambulation

No discussion of early ambulation would be complete without a consideration of possible contraindications. Failure to recognize that not all patients can be ambulated early has probably led to the abuse and disuse of this program in the past. Each patient should be individually evaluated, and if any of the following extenuating factors are present, final judgment may well be to defer ambulation.

1. *Shock:* hypotension is aggravated by motion and the erect position.
2. *Hemorrhage:* because of the attendant shock and fear of encouraging more bleeding with motion.
3. *Generalized peritonitis:* because of the pain, distention, and sepsis.
4. *Unrelieved intestinal obstruction:* because of the distention and the resultant tension on wounds.
5. *Pulmonary infection:* because of tachycardia, dyspnea, toxemia.
6. *Wound evisceration or extensive wound infection:* tensile strength of wound is diminished.
7. *Severe toxic states:* irrational states such as are seen in thyroid crisis, sepsis.
8. *Cardiovascular complications:* ambulation would add to the load of a burdened myocardium.
9. *Extreme debility:* nutritional deficiencies.
10. *Severe anemia:* cerebral anemia aggravated in the erect posture.

Summary

1. The postoperative complications of 500 surgical patients after the performance of one of five standard surgical procedures (gastric resection, colon resection, cholecystectomy, hysterectomy and herniorrhaphy) were studied in relation to early or late ambulation.

2. There was a total of ninety-eight complications among 500 patients; twenty-eight of the complications occurred in the 250 patients ambulated early and seventy in the other half ambulated late, 11.2 per cent and 28.0 per cent respectively.

3. There was a total of thirteen deaths (included in the ninety-eight complications), of which all but one occurred in the group with prolonged bed rest.

4. Pneumonia not only occurred more frequently in the late risers but also was more often fatal.

5. Postoperative wound infections, thrombophlebitis, and distention showed a definite decline with early ambulation, whereas pulmonary atelectasis and cystitis did not.

6. A significantly shortened period of hospitalization was seen for each of the procedures when followed by early ambulation.

7. A detailed consideration of the prerequisites for early ambulation, its advantages, and contraindications is presented.

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CLINICAL-PATHOLOGICAL CONFERENCE

CALCIFIED NODULAR AORTIC STENOSIS

A Study of Eighteen Pure, Advanced Cases

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The usual form of aortic stenosis is the calcified nodular deformity, where the oriface is reduced to a narrow slit-like opening, the leaflets having been made rigid by the deposition of calcium and fibrous tissue in the form of massive nodules with a fusion of the edges of the adjacent leaflets. This cardiac lesion deserves more emphasis than has been given it by most clinicians and pathologists because it represents a distinct entity that is unlike other valvular lesions in its course and manifestations and because it remains a subject of great dispute with regard to its etiology and pathogenesis. The present study was undertaken in an attempt to further elucidate the clinical picture that one might expect from this lesion.

Those interested in the controversial subject of etiology of calcified nodular aortic valvular disease should review the publications of Monckeberg,[7] Sohval and Gross,[11] Margolis, Ziellessin and Barnes,[6] Sophian,[10] Christian,[3] Clawson,[2] Clawson, Noble and Lufkin,[3] Dry and Willius[4] and Hall and Ichioka.[5]

TABLE I. INCIDENCE

	Number
Autopsies	2,987
Aortic stenosis, all forms	90
Aortic stenosis, pure and advanced	18
Hospital Admission	95,266

Material for Study

The studies of calcific aortic stenosis that have been carried out to date have for the most part included those of all degrees of intensity and combined with other valvular heart lesions. In a study of the clinical features of this lesion as is the primary purpose of this study, an inclusion in the series of valvular deformities besides aortic deformities would lead to confusion as one would not likely know which symptom or finding was due to which valve deformity; and, an inclusion of the milder degrees of stenosis would be undesirable because they seldom give rise to any complaints. Consequently, the cases that are reviewed in this study are those of calcified aortic stenosis considered to be sufficiently advanced to give rise to a definite clinical picture and free of any other valvular deformity considered sufficient to complicate the clinical picture. Eighteen such consecutive cases, all determined by autopsy examination, have been selected for study (Table I). During this period of 10 years a total of 2,987 autopsies were performed. Ninety of these were cases of calcified nodular aortic stenosis representing all degrees of deformity and all combinations of valvular lesions. There were 95,266 admissions to the hospital during this period.

Karsner reviewed 200 cases of aortic stenosis in which he reported the following distribution of cases:

Aortic stenosis and other gross rheumatic lesions	
No deformity	25
Slight stenosis	36
Moderate stenosis	9
Marked stenosis	21
	91
Aortic stenosis, pure	
No deformity	53
Slight stenosis	23
Moderate stenosis	10
Marked stenosis	23
	109

The 23 cases considered a marked, pure aortic stenosis in Karsner's series are probably comparable to the cases presented in this study.

TABLE II. AGE AND SEX
St. Luke's Hospital

Age	Male	Female	Total
20-29	0	0	0
30-39	1	0	1
40-49	2	1	3
50-59	1	1	2
60-69	1	1	2
70-79	6	0	6
80-89	4	0	4
90-99	0	0	0
Total	15	3	18

Age and Sex

Fifteen of our eighteen cases were in males (Table II). In Karsner's series there were 200 males and 144 females. Eight were found to be under seventy years of age while the remaining ten were seventy or over. The average age was sixty-three years. Karsner found calcified aortic stenosis to be three times as frequent among persons fifty years or more as among those less than fifty. Calcified aortic stenosis then is essentially a disease of old age; nevertheless, it does occur in the younger age groups and is recorded occasionally in the early twenties. The average age of other authors varies from fifty-two to sixty-five years.

Calcific aortic stenosis is a disease predominantly of males, having been found five times as frequently in males as in females in this series. There was no need for correcting these figures for the relative frequencies of men and women in our entire autopsy series as their

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frequencies were very similar. Other authors report ratios ranging from 1.6 males to 4.5 males for each female.

TABLE III. SIGNS AND SYMPTOMS
(At time of last admission)

Clinical	Number	Percentage
Dyspnea	14	77
Orthopnea	10	55
Angina	10	55
Cough	7	39
Edema	7	39
Palpitation	3	16
Syncopé and Dizziness	3	16
Ascites	3	16
Cyanosis	3	16
Sudden death	2	11
No symptoms	2	11

Signs and Symptoms

A review of the signs and symptoms at the time of the last admission (Table III) revealed the most frequent symptom encountered and the first symptom to develop in most cases to be dyspnea or exertion, having been found in 77 per cent. It was frequently accompanied by some degree of orthopnea, especially as death was approached. Dyspnea can readily be explained as a transient episode of left heart failure. The heart during the period of gradual compensation through hypertrophy and dilatation to the increased demands laid upon it by progressively narrowing aortic valves, temporarily cannot cope with the demands of increased exertion until it responds through dilatation or until the exertion is removed. Ultimately, the time comes when the heart's capacity for compensation will have been reached and the dyspnea becomes permanent.

Angina pectoris was a complaint in 55 per cent of the patients when seen at the time of last admission. Particular emphasis must be placed on the symptom because it is undoubtedly the reason for the diagnosis of coronary disease in so many of the cases where angina occurs, neglecting entirely the possibility of a valvular disturbance. Angina is a symptom that rarely occurs in mitral stenosis or aortic insufficiency; consequently, when found accompanied by any organic heart murmur it should lead one to suspect calcified disease of the aortic valves. The explanation of angina pectoris as it occurs in aortic stenosis is not settled with any certainty. It was once thought that it might be due to narrowing of the coronaries. Karsner, as late as 1947, found some degree of coronary sclerosis in all his cases and believes this to be a factor in the production of angina. Most investigators, however, have been unable to find any increased incidence of coronary sclerosis in these cases; in fact, Dry and Willius concluded that the degree of sclerosis occurred in inverse proportions to the degree of aortic stenosis. Clawson suggested that the calcific nodules may be impinged on the coronary ostia but this has never been verified. Contratto and Levine offer an explanation based on physical principles. They suggest that the increased velocity of the blood flow past the coronaries serve to suck the blood from the coronaries, thus reducing their inflow. Even though they are able to compensate by dilating, they are still not able to supply sufficient blood for the tremendously increased demands in this condition with the ultimate result of a myocardial ischemia and consequent angina. This is purely theoretical and has never been proved. Green held the view that aortic stenosis decreased the coronary blood flow during systole by causing a relatively higher degree of resistance in the coronary bed during the systolic contraction of these powerful hypertrophied hearts. His cases with angina had larger hearts than were found in the others. Another explanation offered at this time is based on two established facts: that the systolic contraction period of the cardiac cycle is prolonged in aortic stenosis and that coronary filling occurs during diastole. The diastolic phase of the cardiac cycle is shortened correspondingly to the lengthening of the systolic phase at a given heart rate with the result that the coronaries are incompletely filled during this short diastolic phase.

TABLE IV. CORRELATION OF ANGINA WITH CORONARY SCLEROSIS AND HEART WEIGHTS

Group A	Average Heart Weight	Coronary Findings	Number Cases
No angina (8 cases)	577 grams	Grade II sclerosis	3
		Grade I	3
		Grade 0	2
Group B Exertional angina (5 cases)	603 grams	Grade II	2
		Grade I	3
Group C Sudden severe pain (5 cases)	621 grams	Grade IV and thrombosis	1
		Grade II	1
		Grade I	2
		Grade 0 and embolism	1

The cases of angina in this series were studied and correlated with the weight of the heart and the size of the coronary lumina (Table IV). In those cases not demonstrating angina, the degree of sclerosis did not differ appreciably from those that complained of exertional angina. In only two of the five patients who complained of excrutiating precordial pain was there any coronary findings to account for it. One had a severe grade of coronary sclerosis, a coronary thrombosis and myocardial infarction. The other had a coronary embolism. The coronary ostia were patent in all of the cases. There appears to be a significant difference in the heart weights among the three groups. From this study one can conclude that in most cases of aortic stenosis, disease of the coronary vessels and their ostia cannot account for the common complaint of angina. There may be a greater frequency of angina in the heavier hearts.

Syncope and dizziness are of considerable diagnostic significance when they occur; however, they are not frequently encountered in this series, where they were only 16 per cent of the total. These symptoms are believed to be due to impairment of cerebral circulation because of the inability of the aortic pressure to fill the cerebral vessels adequately.

Sudden death, that is, a sudden turn for the worse in a previously stabilized individual with death following in a few hours, occurred in two of our patients (11 per cent). One, a sixty-three-year-old female, was awakened from sleep with profound dyspnea. She was brought

immediately to the hospital where she was found to be unresponsive, cyanotic, and severely dyspneic, dying thirteen hours after admission. Her coronary vessels were entirely normal. The second case was an eighty-four-year-old male with a previous history of aortic valvular disease, who suddenly was overcome with acute cardiac distress, dying twenty-one hours after admission to the hospital. His coronaries were found to have grade IV sclerosis with a thrombosis and myocardial infarction. The aortic valvular disease was considered an incidental finding at the necropsy. Similar percentages have been found by other investigators, the average of all other figures being 11.5 per cent. The majority of reported cases have occurred during chronic congestive heart failure with no immediate cause demonstrable. The possibilities suggested to explain this occurrence are coronary thrombosis, a myocardial ischemia producing heart block or ventricular fibrillation, and sudden cerebral anemia.

TABLE V. PHYSICAL FINDINGS AT TIME OF LAST ADMISSION

Findings	No.	Percent
Systolic aortic murmur	13	72
Aortic diastolic murmur	3	16
Mitral systolic murmur	7	39
Precordial systolic murmur	4	22
Mitral diastolic murmur	4	22
Pulmonary congestion	13	72
Pleural effusion	3	16
Hepatomegaly	4	22
Cardiac enlargement	11	61
No findings	0	0
Positive findings	18	100

Physical Findings

The most frequently and most characteristic physical finding (Table V) is the murmur heard over the entire precordium but loudest over the aortic area, i.e, the second right interspace, which if heard alone is pathognomonic of aortic stenosis. It can be transmitted along the right manubrial border and classically it is transmitted in the right or in both carotid arteries, and in the right and sometimes both subclavians. When extreme it can be heard at some distance from the body. The murmur is a harsh, rough, saw rasping murmur when the stenosis is of an advanced degree. This murmur was found in 72 per cent of the eighteen cases presented. Karsner has been able to find no difference in the incidence of murmurs with the varying degree of stenosis; however, he did find a relation between the quality of the murmur and the degree of stenosis. The loud, harsh, rough murmur was heard most frequently in cases of marked and moderate stenosis, with a soft blowing aortic murmur in cases of slight to moderate stenosis. An aortic thrill will frequently be felt in advanced cases, especially when the patient is examined leaning forward with the flat of the hand over the aortic area during full exhalation. With marked decompensation the thrill will often disappear and the murmur loses its harshness and intensity.

The absent or greatly diminished second aortic sound is perhaps the most single confirmatory sign. It may sometimes be replaced by a soft blowing diastolic murmur which, unfortunately, is not a common finding, Reich[8] having found it absent in 9 per cent of cases of pure aortic stenosis. When the second aortic sound is absent the aortic stenosis will most certainly be of a severe grade with extreme rigidity of the aortic cusps to account for the absent second sound.

An aortic diastolic murmur was heard in 16 per cent of our cases. This figure is low in comparison with other published results, Reich[8] having reported it in 40 per cent of the cases in his series. It is usually assumed to indicate some associated aortic insufficiency.

An apical systolic murmur was found in seven cases (39 per cent). When present it can be assumed to mean either a mistaken identity, a relative mitral insufficiency from dilated left ventricle, or organic mitral insufficiency although no such cases were included in this series.

Presystolic and diastolic mitral murmurs were heard in four of twenty-two cases. They may mean in the cases presented here an Austin Flint murmur from accompanying insufficiency or possibly a mistaken identity. When heard otherwise it usually means an associated mitral stenosis. In Karsner's 200 cases of mixed valvular lesions he found eighteen presystolic mitral murmurs of which fifteen were proved at autopsy to be due to mitral stenosis. In eighteen cases of diastolic mitral murmurs nine were proved to have mitral stenosis.

Failure to localize the murmur to any particular area, employing the term "precordial murmur" is generally recognized as a common finding (22 per cent in this series). The reason for the failure of this murmur to localize is not known.

The classical pulse of an aortic stenosis is the "pulsus tardus et parvus." The recorded pulse wave will show a slow rise and fall with an intervening plateau, the entire amplitude being greatly reduced. There may be a slight interruption near the summit, the anacrotic pulse, or it may have a bifid apex, the so-called pulsus bisferiens. Clinically, there is a definite delay in the rise of the pulse with a peak occurring later than is the case in a normal pulse. This characteristic pulse has not been frequently found by most authors, perhaps because of the combinations with varying degrees of insufficiency as most aortic stenoses seem to have.

Aortic stenosis does not affect the systolic blood pressure and it will either decrease the diastolic pressure slightly or not at all. The pulse pressure, consequently, is normal or slightly increased. Blood and pulse pressures are not informative then because of the little effect that aortic stenosis has on them and because of the many other variables that are usually present which do affect the blood pressure.

Cardiac enlargement was demonstrated in eleven cases or 61 per cent at the time of the last admission to the hospital. The heart is characteristically enlarged to the left and downwards as far as the sixth and even the seventh intercostal spaces. The heaving apex may be seen four or five cm. in breadth in the intercostal spaces; however, when completely compensated the apex is not demonstrably enlarged.

The electrocardiogram shows nothing specific for this condition. It demonstrates left ventricular strain by left axis deviation and more so by negativity of the T-waves in leads I and I and II. Evidence of delayed conduction

are seen occasionally, including bundle branch block, interventricular block, or auricular-ventricular block of various degrees ranging from prolonged A-V conduction to complete dissociation. This delayed conduction has been explained on several bases: extension of the calcific process into the bundle of His and myocardial ischemia. Friedberg and Sohval[11] felt it unlikely that an extension of the lesion is the explanation because this extension cannot be demonstrated on specimens, because the disturbances vary so much for a fixed lesion and because it would not involve a single bundle.

TABLE VI. DURATION OF SIGNS AND SYMPTOMS

History of	5 years or more		2-5 years		6 mos. to 2 years		1 mo. to 6 mos.		Last mo.	
	No.	%	No.	%	No.	%	No.	%	No.	%
Dyspnea	5	28	6	33	10	56	10	56	14	77
Orthopnea	2	11	2	11	3	16	3	16	10	55
Angina			2	11	3	16	3	16	10	55
Cough					2	11	3	16	7	39
Edema	1	6	2	11	4	22	6	33	7	39
Palpitation	1	6	2	11	3	16	3	16	3	16
Syncopé	1	6	1	6	2	11	2	11	3	16
Ascites							1	6	3	16
Cyanosis									3	16
Sudden death									3	16
No symptoms	13	72	11	61	5	28	5	28	2	11
Positive symptoms	5	28	7	39	13	72	13	72	16	89

*The percentages in this table were calculated on the basis of the entire series of eighteen as the histories of the duration of the complaints whether from the single last admission record or from a combination of old records are reasonably accurate.

The use of fluoroscopy and roentgenograms in the clinical diagnosis of calcified aortic stenosis is fast becoming of great importance. One might expect from observing the amounts of calcium in some of these lesions that they could easily be demonstrated by roentgen rays and would appear on the fluoroscopic screen as dancing shadows over the aortic area. By the use of special technique including a small fluoroscopic aperture approximately two inches square, a screen of high intensity with the patient in the slight right anterior oblique position, the shadows can be demonstrated by fluoroscopy. One must accommodate satisfactorily and look through the heart, watching for dark irregular shadows along the oblique line between the apex and base which have a characteristic dancing motion between systole and diastole.

The patient then can be rotated to the left anterior oblique and the aortic differentiated from the mitral calcification. Sosman[13] reports that most of the valves proved to contain calcium at autopsy are demonstrable roentgenoscopically. He considers it by far the most important and valuable finding in differentiating aortic stenosis from other conditions causing left ventricular hypertrophy. He found calcification in the aortic valves in fifty-nine patients by x-ray methods. Several of these came to autopsy and in all of them except one, massive calcium deposits were found in the aortic valve while the exception had calcification in the coronary vessels. He has seen many cases of minimal calcified aortic stenosis come to autopsy when the deposits were overlooked by x-ray study. Reich[8] states that the correct clinical diagnosis can be almost doubled with the use of x-ray.

Diagnosis

A positive diagnosis of aortic stenosis rests ultimately upon the recognition of one or more criteria, the characteristic murmur which is the most significant physical finding when present and the fluoroscopic demonstration of aortic calcification. Although the presence of a thrill is significant, to demand its presence for a diagnosis would lead to failure to recognize aortic stenosis in the majority of cases, especially in the earlier ones.

A combination of the above absolute findings with a negative Wassermann, negative history of lues, and absent peripheral signs will rule out aortic insufficiency. Calcified aortic stenosis is very frequently confused with arteriosclerotic heart disease where an electrocardiogram may be of no help. The murmur and x-ray findings are all that is necessary to differentiate.

The clinical diagnosis can be made in mild cases with less accuracy. Willius reports that a diagnosis of mild aortic stenosis, grade I or grade II intensity can be made on the bases of a rough, moderately loud systolic murmur over the aortic area with poor transmission, absent thrill, unaltered A_2 an aortic diastolic murmur present only rarely, peripheral pulse and pulse pressure unaltered, frequent demonstration of small amount of calcium by special roentgenoscopic technique, and either no or slight left axis deviation on electrocardiograms.

Course and Prognosis

The patient with calcific aortic stenosis is well for a long time before the onset of symptoms. One of the striking features of this disease is the ability of the heart to compensate for this gradually developing lesion over a period of many years without showing clinical evidence of myocardial insufficiency. These hearts hypertrophy to enormous proportions before decompensating. The lesion is often picked up at an insurance examination or on a routine checkup and in a few cases is not even suspected during life, only to be found at the autopsy after death from other causes. The patient may have known of the existence of an aortic stenosis with a typical murmur for many years and feel well all this time, but when he fails, he fails rapidly, death not being far off, usually not more than one or two years at the most. Contrast this to a mitral stenosis where the individual's life expectancy is several years reduced and where there is decompensation from which the patient will recover and fail repeatedly over a period of many years. The same is true of tricuspid stenosis.

A study of the course of the disease was made by following the signs and symptoms and physical findings over a number of years before death, at intervals, of five or more years, two to five years, six months to

two years, one to six months, and the last month before death.

A small number of the patients (seven or 39 per cent) gave a history of at least one symptom referable to the heart two years or more preceding death. Most of these stant for any given interval. Physical evidence of left heart failure, temporary or otherwise, was found at all times in the bare majority of cases, while evidence of complete heart failure was present only terminally and then only in a small number.

TABLE VII. DURATION OF PHYSICAL FINDINGS

	5 years or more		2-5 years		6 mos. to 2 years		1 mo. to 6 mos.		1 mo. or less	
Hospital Records	2		5		10		13		18	
Physical Findings	No.	%	No.	%	No.	%	No.	%	No.	%
Systolic aortic murmur	1	50	3	60	7	70	9	69	13	72
Diastolic aortic murmur			1	20	1	10	1	7	3	16
Systolic apical murmur			3	60	4	40	6	46	7	39
Diastolic apical murmur	1	50	3	60	3	30	4	41	4	22
Systolic Precordial murmur	1	50	2	40	2	20	3	23	4	22
Pulmonary congestion	1	50	3	60	5	50	6	46	13	72
Pleural Effusion									3	16
Hepatomegaly							3	23	4	22
Cardiac Enlargement	2	100	3	60	6	60	8	61	11	61
No findings	0		0		0		0		0	
Positive findings	2		5		10		13		18	

*Percentages on this Table are based on the number of records available at that particular time category.

cases had some exertional dyspnea indicating that there were transient episodes of left heart failure with exertion; transient, because the pulmonary congestion was overcome by the unusual ability of the heart to compensate through further dilatation and hypertrophy. Finally, the interval is reached between six months and two years when the ratio of symptoms to nonsymptoms is almost reversed. From that point on 72 per cent of the patients had heart complaints which were chiefly those of left heart failure until shortly before death when symptoms and signs of complete heart failure were apparent in a few cases.

A study of the progression of physical findings was handicapped by the small number of patients with previous hospital admissions covering a number of years before death, and, as a consequence, the results at these longer intervals will not be of any great statistical significance, but will be mentioned, nonetheless.

Records of five years or more before death are available in two cases. One followed a course characteristic of the disease. The patient was a female, fifty-five years of age at the time seen about seven years before death. At this time she was admitted because of a chronic cholecystitis and cholelithiasis. There were no symptoms referable to the heart, but the patient was found to have a heart enlarged 12 cm. to the left from the midline and a harsh systolic aortic murmur transmitted into the great vessels of the neck. When seen next, seven years later, and just twelve hours before death, she was in a state of acute cardiac decompensation giving a history of increasing exertional dyspnea for only one year.

The course as followed through physical findings proves to be quite similar to that mentioned above with regard to signs and symptoms. In every record examined, irrespective of the time before death, there was at least one physical finding, usually either a heart murmur or cardiac enlargement or a combination. It is of striking significance that the characteristic murmur of aortic stenosis was heard in 60 to 72 per cent of cases where records for less than five years before death were available, this percentage remaining almost con-

These clinical findings tend to confirm the generally accepted belief that the symptoms are held in abeyance for many years, but once complete failure occurs the end is near at hand, usually within six months or less; in fact, complete failure seems to be followed so rapidly by death in most cases that physical evidence has become apparent in only a few. The majority of patients with congestive heart failure respond poorly to therapy.

Pathologic Anatomy

A study of the necropsy findings (Table VIII) reveals that calcified aortic stenosis was present in advanced degrees in 100 per cent of the cases as this was the basis for the selection of the cases. Evidence of chronic congestive heart failure in the form of chronic passive congestion of the liver, spleen and kidney and lung with its terminal complications of bronchopneumonia, pulmonary infarcts and acute gastroenterocolitis was present as a moderate to severe degree in all of the cases. It was considered as primarily responsible for death, however, in thirteen or 72 per cent of the cases. Death from other causes was found in five cases and even in these cases aortic stenosis and congestive heart failure may be assumed to have been a factor. These were the result of a coronary thrombosis and myocardial infraction, a coronary embolism from a broken off piece of the calcified valve, a car accident with complicating pneumonia, and two cases following surgery, one a transuretheral resection of the prostate for benign hypertrophy with exsanguination and the other for surgery on an advanced bladder carcinoma. These figures are not similar to those of other authors. Reich[8] found death in only seven of twenty-two cases of aortic stenosis or 32 per cent as explainable by congestive heart failure or pulmonary edema. However, he has six cases of bronchopneumonia as the cause of death. We considered most cases of bronchopneumonia as a terminal event complicating the congestive heart failure which was considered the primary cause. Many authors present much lower figures varying from 30 to 50 per cent but one must keep in mind that their cases of aortic stenosis were not restricted.

Clinical Diognosis

The diagnosis of calcified aortic stenosis was made clinically in 33 per cent of the cases (Table IX). This figure is not meant as adverse criticism of the clinicians of this hospital; as a matter of fact it compares rather favorably with the figures of other institutions. Karsner's study of the figures of the Cleveland City and University Hospitals showed diagnosis of aortic stenosis in thirteen or 23 cases of marked stenosis or an average of 55 per cent. In 33 cases of slight and moderate stenosis a correct diagnosis was made in ten cases or 30 per cent. The chief source of confusion seems to lie in differentiation of arteriosclerotic and hypertensive heart disease from calcific aortic stenosis as the diagnosis of the former was made exclusively in 33 per cent. Granted that this diagnosis was correct in two cases it was made entirely to the exclusion of aortic stenosis. Another source of error was the confusion of aortic stenosis with other valvular disease when none actually existed.

The diagnosis of calcified aortic stenosis is not an easy matter when purely physical signs are used, especially in comparison with other forms of heart disease, e.g., aortic insufficiency and hypertensive heart disease. In the latter conditions accuracy is much greater, thanks to the instruments and diagnostic methods of precision that are available. There is but little question that with the more widespread use of roentgenoscopic procedures the diagnosis of aortic stenosis will reach a higher degree of accuracy.

Therapy

One might well have raised the objection to the necessity of making an accurate diagnosis that it really makes very little difference what diagnosis is made because the treatment employed will be the same for all cases of cardiac decompensation regardless of the cause. This same objection was once raised to diagnosing accurately congenital heart disturbances; however, with the development of surgical means of correcting certain of these anomalies the practical importance of an accurate diagnosis is at once realized.

We are now just entering into an era of great advancement in cardiac surgery. The day may well come in the near future when these aortic lesions as well as other cardiac lesions will be amenable to surgery. Only recently a technique has been devised by Smithy[11] which can be used in the correction of aortic and mitral stenosis. Employing a specially devised valvutome he successfully incised the aortic valves of experimental animals through an aortic approach, later extending the experimental work to an approach through the ventricle and auricles themselves. The culmination was reached when the procedure was performed in human patients with very encouraging results both from a surgical and a clinical standpoint.[10] Certainly, with the realization that selected cases of aortic stenosis will be amenable to surgical correction in the not too distant future, the importance of accurate diagnosis is imperative and must improve over the 33 per cent as found in this series.

TABLE VIII. PATHOLOGIC DIAGNOSIS

	No.	Per Cent
1. Calcified aortic nodular disease, grades III and IV	18	100
2. Chronic passive congestion, congestive heart failure, moderate to severe	18	100
3. Terminal pneumonia	7	39
4. Acute pulmonary edema	5	28
5. Bicuspid aortic valve	3	16
6. Pulmonary infarcts	3	16
7. Hypertensive cardiovascular disease	2	12
8. Coronary arteriosclerosis, Grade IV	1	6
Grade III	0	0
Grade II	5	28
Grade I	8	67
Grade 0	4	22
9. Coronary thrombosis and myocardial infarct, new	1	6
old	1	6
10. Coronary embolism	1	6
11. Old myocardial infarcts	3	16
12. Acute terminal gastroenterocolitis	1	6
13. Benign prostatic hypertrophy	2	12
14. Surgical exsanguination of blood following transurethral resection of prostate for benign hypertrophy	1	6
15. Myelogenous leukemia, early	1	6
16. Carcinoma of bladder	1	6
17. Carcinoma of prostate, early	1	6

TABLE IX. CLINICAL DIAGNOSIS, PRIMARY

1. Hypertensive cardiovascular disease	1	
2. Coronary thrombosis	3	—6 (33 %)
3. Arteriosclerosis heart disease	2	
4. Calcified aortic stenosis	4	
5. Calcified aortic stenosis and mitral disease	2	—6 (33 %)
6. Rheumatic heart disease, other than aortic stenosis	4	
7. Pneumonia and car accident	1	
8. Benign prostatic hypertrophy and carcinoma of bladder	1	
	18	

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History of Medicine In Minnesota

NOTES ON THE HISTORY OF MEDICINE IN COTTONWOOD COUNTY

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Thoughts of the early pioneer doctors of Cottonwood County bring to mind the story of the hardships and self-denial of all of the early settlers, and particularly the fatigue and exposure endured by the physicians, who in faithfulness to their professional obligations were on duty at all hours of day and night, in all weathers, traveling over trackless prairies, fording unbridged streams. The history is rich in anecdotes of their courage, resourcefulness and loyalty, under conditions that, viewed from this day of ease in communication and transportation, of wealth of equipment and of diagnostic and therapeutic aids, seem almost incredible. As a rule, it may be said that almost without exception those physicians were men of ability in their day and that they had a high sense of honor. Many a pioneer, during illness of himself or of some one dear in his family, felt that in the doctor's hands there was safety, and had faith that the best that could be done would be accomplished.

Cottonwood County, created by the Legislative Assembly of the Territory of Minnesota on May 29, 1857, was organized officially on July 29, 1870, when the county officers met at Great Bend, long since vanished, which was the first county seat. In the same season the first school of the county was started in that community. Although settlers came early into the county, it was not until 1871 that important development of the region began. The rigors of pioneer life were severe, transportation was extremely difficult, the Civil War took the sturdiest and youngest of the men from farms and businesses, Indian scares in 1862 frightened away many settlers who did not return until several years later, and recurring plagues of grasshoppers for some years were powerful deterrents to settlement. In 1870 the county had a few small hamlets or villages and a total population of 543. In 1871, the first great boom year of the county, came the railroad, which now is part of the Chicago and Northwestern system. On June 20, 1871, the village of Windom, destined to become the county seat, was platted on the east bank of the Des Moines River, near the line of the railroad. In July, when the first locomotive puffed into Windom, the place was ready for business: religious services had been held and social diversion organized; there were a community well, a hardware store and a bakery. That autumn, much wheat was shipped from the new settlement. The county had found itself.

The first physician who practiced his profession in Cottonwood County was Dr. Allen Smith, who arrived in Windom from Ohio on October 10, 1871. After two years in Windom he returned to Ohio, where his death occurred soon afterward.

Other physicians of the county, about some of whom little is known, and about others of whom considerable biographical information has been gleaned, are listed hereafter in alphabetical order.

Biographical Notes

Silas D. Allen (1826-1907) was born in Bradford County, Pennsylvania, on December 1, 1826. His wife, Lucy A. Allen, also was a native of Bradford County.

Dr. Allen obtained his early education in his native place and taught school there for a few years before studying medicine at the University of Michigan at Ann Arbor. Early in 1854, then twenty-eight years old, he decided to try his fortune as a gold miner in California, and on May 29 of that year he took passage on a sailing vessel at New York, en route to San Francisco by way of Cape Horn and the Pacific Coast. He remained in California until November 14, 1855, and was reasonably well paid financially for the hardships and varied experiences he passed through.

On his return from the Coast he settled, in 1856, in northeastern Iowa, near Lansing, and there farmed and practiced medicine for a number of years. Later he and his family moved to Carroll County, Missouri, where they stayed until 1874, when they came to Cottonwood County, Minnesota. The new home was a farm on the Valley Road, a mile from Windom; their first house, in which they lived six years, was built of logs. In 1880 Dr. Allen erected a good frame house, which still stands in 1948.

Always a lover of farming, and especially stockraising, Dr. Allen combined these occupations with the practice of his profession. Calls for his professional services were numerous, and he never failed to respond, day or night, generally going on horseback, which was the most practical and the quickest method in those days. He was a skillful physician, and his wisdom as counselor was much sought in serious cases by other physicians, who had full confidence in his skill and advice.

In September and October, 1875, there was a severe epidemic of diphtheria in the community, during which many were afflicted and thirteen children died. Dr. Allen successfully took care of most of the sick, and what a terrific strain it must have been! Those were anxious and trying days for both parents and physician. Early settlers still living in and near Windom who can remember anything about that epidemic say that the usual treatment then for diptheria was to have the patient gargle with a mixture of vinegar and pepper. In addition, in the care of children, the patient was covered completely with a sheet, and kerosene fumes then were forced under the sheet for the child to breathe. It is told that, under this treatment in some cases, the patients vomited up tube casts of membrane, and recovered.

After the medical practice act of 1883 was passed in Minnesota, Dr. Allen practiced under an exemption certificate.

The doctor was a broad-minded man of strong convictions, ever conscientious, and intolerant only of hypocrisy or graft of any nature. He always took an active interest in social conditions and public affairs, and worked for the betterment of the community. In 1901 Dr. Allen sold his farm and moved into Windom, retiring from active life. A great reader, he owned a splendid library of the best works, and in his later years devoted much of his time to his favorite authors.

Mrs. Allen died in 1902 in Windom. After her death the doctor lived alone most of the time until January, 1907, when he was stricken with an illness that ended in his death on April 4 of that year.

By his generous and sympathetic disposition, the doctor made many friends. He is remembered by many as one who seemed to think of his professional services only in terms of helping suffering humanity. After his death it was

found that his account books showed that thousands of dollars, which he never endeavored to collect, were due him for his work as a physician.

William Hulbert Banks (1874-1947), a native of Cottonwood County, was a son of one of the earliest pioneer settlers of the county. The following letter, written by Dr. Banks' son on December 27, 1947, to Mr. D. L. Keith, editor of the *Cottonwood County Citizen*, and published in that paper, tells the interesting story of the doctor's life:

William Hulbert Banks was born in Lakeside Township on October 14, 1874. His father, William Carr Banks, was one of the original settlers in the county, homesteading at Swan Lake in 1869, farming or residing in Windom until 1910. He hauled food supplies by ox team through blizzards from the rail terminal at St. James to Windom, when the hamlet was down to its last barrel of flour. He survived the grasshoppers to become a charter member of the "Idle Rich" club of court house square.

Bethia Odell Banks, Dr. Banks' mother, came to the county from Wisconsin to teach school and homestead. She was a leader in temperance, woman's suffrage, and educational advancement.

Dr. Banks attended his mother's Oak Grove school at the age of five to increase the school allotment. He graduated from the Wilder Academy and the Keokuk, Iowa, College of Physicians and Surgeons in the class of 1900. He practiced for twenty-one years in Wisconsin and Minnesota, and for twenty-four years at Yakima, Washington.

During one year, 1916-1917, Dr. Banks moved to Windom and conducted medical practice Here he married Miss Bess Gibson and later the family returned to Hudson, Wisconsin.

During his boyhood, Dr. Banks broke prairie sod, speared fish by torchlight at Fish Lake, and raced his horse at the Windom fair. He was a member of the Windom Drum and Bugle Corps of the '80's. With his brother, John, he hunted ducks with a "zulu" musket, the one sighting the gun while the other struck the firing pin. He heard his mother take part in contests and debates in the original opera house. He recalled one Christmas eve when the family set out with the oxen in a blizzard for a program at Bingham Lake and drove for two hours (a distance of two miles). When the oxen stopped on top of a haystack beside their own barn, they unyoked and had their "doin's" at home. He envied his father's experience in 1869 of seeing elk at Swan Lake.

A few days after the James Brothers' bank robbery at Northfield, in September, 1876, his older brother, John, was fishing at the north end of Bingham Lake, when he saw two strangers riding west, north of the lake, keeping away from the beaten trail and farm buildings. Later when the family learned of the robbery, they believed the two strange riders were members of the James gang, crossing Cottonwood County toward the Missouri valley. (Jesse and Frank James eluded capture.)

Dr. John H. Tilford encouraged William H. Banks to study medicine and took him on calls to patients.

Dr. J. F. Scott (now retired at Yakima), who succeeded Dr. Tilford later in the '90's, was the family's doctor. In 1922 he attended William Banks, Sr., at Yakima during his last illness, and cared for Dr. Banks in 1946.

To his own knowledge, Dr. Banks was the first child born in the county to become a physician.

Dr. and Mrs. Banks returned to Windom many times in the past twenty-five years for visits at the home of the Edward McCauley family, renewing old friendships and studying the geography and history of the region. As one more native son of Cottonwood County, he never forgot his Minnesota heritage.

Thomas A. Beach, who is said to have registered in Minnesota as a physician in 1887, was in Windom, Cottonwood County, in 1893.

Theodore Beck, in Windom in 1896, left Minnesota in that year for Ohio, it is believed. Research has not disclosed that he was licensed in Minnesota. A physician of this name was in Pleasant Hill, Ohio, in 1896; in Dayton, Ohio, in 1918.

Le Roy R. Brown (1855-1932) for one year of his forty-six years as a physician in Minnesota practiced in Windom, Cottonwood County, and for one year in Heron Lake, Jackson County.

Born on February 25, 1885, at Mankin, Michigan, Le Roy R. Brown was a son of Reuben J. Brown and Betsy Ann Kingsley Brown, both of whom were descended from veterans of the American Revolution. He was graduated in 1878 from the state normal school of Michigan in Ypsilanti, and thereafter for three years taught school in California. In 1881 he began to "read medicine," as was the custom of the period, and to assist in practice, with Dr. Brekke, of Ann Arbor, Michigan, and in 1882 he matriculated in the medicial department of the University of Michigan for a course of three years. On graduation, in 1885, with a degree of doctor of medicine, he began medical practice in Saint Paul, Minnesota; he was licensed as a physician in Minnesota on October 6, 1886, receiving certificate No. 1276 (R).

In 1887 Le Roy R. Brown was married to Mina Allen at Ann Arbor, Michigan. To this marriage were born three sons and three daughters. Mina Allen Brown died on May 7, 1907.

In 1896 Dr. Brown left Saint Paul for Windom, where he practiced about one year. For the following year he was in Heron Lake. In 1898, on returning to Saint Paul, he served as a medical fellow at the City and County Hospital. For a number of years he was associated with Dr. Schadle in the nose and throat work at the Saint Paul Free Dispensary, and later was in charge of the department. In 1915 he was appointed to the staff of police surgeons of Saint Paul. On his retirement in March, 1928, he estimated that in his years of service he had answered approximately 15,000 emergency ambulance calls. After his retirement he engaged in private practice, with offices in his home.

Dr. Le Roy R. Brown died on November 22, 1932, at the Ancker Hospital, Saint Paul, from cerebral hemorrhage, after an illness of three months. He was survived by two daughters, Mrs. Ralph E. Brewer and Miss Lucia Brown, both of Saint Paul, and a son, John R. Brown, of Kalkaska, Michigan.

Dr. Brown was a member of the Presbyterian Church and of fraternal organizations, among them the Masonic Lodge and the Independent Order of Odd Fellows, in both of which he held office at various times. His funeral was conducted at the Masonic Temple, Saint Paul, under the auspices of the Scottish Rite Masons.

William Thompson De Coster (1874-1945) was for forty-eight years a homeopathic physician in Minnesota, for two years (1899-18901) in Windom, Cottonwood County.

Born at Kingston, Meeker County, Minnesota, on August 25, 1874, he was a son of pioneer settlers of the state, Granville Foster De Coster and Mary A. Hall De Coster, both of whom were natives of Maine. Granville F. De Coster was first a farmer in Meeker County, next was in Watonwan County six years, and was then in Jarvis County. After 1901 he made his home in Winter Haven, Florida, where he died on May 7, 1923; Mrs. G. F. De Coster died in March, 1931.

William T. De Coster received his early academic education in the schools of Saint Paul. In 1897 he was graduated with the degree of doctor of medicine from the University of Minnesota College of Homeopathic Medicine and Surgery; he was licensed in Minnesota in that year, and thereafter practiced his profession continuously. For about two years after gradu-

ation he was in South Saint Paul, where in addition to conducting a private practice he was a contract surgeon for the Swift Packing Company. In February, 1897, he settled in Windom, Cottonwood County, where he practiced for two years. Early in 1901 he joined Dr. Walker in operating a hospital at Worthington; later, the two physicians established a hospital at Windom and in 1910 another at St. James, and until 1914 conducted the three institutions. Dr. De Coster then had a hospital in Madelia for two years. In 1915 he settled in Mankato, where he opened his private hospital. It is said that in this period he had a hospital in Rochester also.

Dr. De Coster was a public-spirited man, an independent thinker in politics, and a member of numerous fraternal organizations and of the Mankato Golf Club. He was deeply interested in the history and beauty of Minnesota, and his favorite hobby was visiting interesting localities in all sections of the state. He died in Mankato from coronary thrombosis on March 26, 1945. He was unmarried.

Noah Diamantenberg (1864-1932) was born Noa Dymenberg at Czernowitz, Austria, on March 15, 1864. When he came to America is not known. He was graduated from the Saint Paul College of Medicine with the degree of doctor of medicine in 1866 and was licensed as a physician in Minnesota on March 30 of that year, receiving certificate No. 1174 (R). He was for a time, in 1886, in Cottonwood County. Records of the American Medical Association disclose that he was licensed in Iowa in 1888, in Colorado in 1889, and in Illinois, in 1890. He was a resident of Minturn, Colorado, and was a member of the Colorado State Medical Society. His death occurred at Minturn on December 24, 1932, when he was struck by a train.

Charles A. Greene (1845-1910) was born in Rhode Island. He was graduated from the medical department of the University of Buffalo (New York) in 1873 and for two years thereafter practiced medicine in New York State. In 1875 he came to eastern Minnesota, where he engaged in practice some three years. The *Official Register of Physicians* of Minnesota for 1883-1890 states that he was licensed in the state on December 31, 1883; he held certificate No. 664 (R).

In 1887 Dr. Greene settled in Windom, Cottonwood County, where for twenty-three years he was a valued member of the community and an honored physician. Skilled in medicine and surgery, kindly and full of fun, courageous in the face of hazards, he never refused a call for his help, no matter how severe the weather or impassable the roads.

Dr. Greene was an active Mason, and was a member of the Grand Army of the Republic, a veteran of the Civil War, having served in Company A, Thirteenth Wisconsin Volunteers Regiment of Infantry from 1861 to 1866. When he died in Windom on November 10, 1910, he was survived by his wife and his daughter, Nellie, both of Windom, and by two brothers, John E. Greene, a lawyer in Minot, North Dakota, and Edward Greene, a professor in Washington, D. C.

Horace E. Harmon (1873-1913) was for twelve years a respected physician of Jeffers, Cottonwood County.

The following notes are based on an obituary that appeared in the *Jeffers Review* of January 30, 1913:

Horace E. Harmon was born at Faribault, Minnesota, on July 27, 1873. In 1879 he moved with his parents to South Dakota; in 1893 he was graduated from the South Dakota State College at Brookings. After four years of study of medicine at the University of Minnesota, he practiced medicine at Bryant, South Dakota, for one year. He next took a year's postgraduate work (1899) in a Minneapolis hospital. In 1900 Dr. Harmon settled in Jeffers; his residence was broken only by an absence of six months that year to take the degree of doctor of medicine at the University of Iowa, in Iowa City.

In October, 1902, Horace E. Harmon was married to Cora B. Potter. Mrs. Harmon died on April 23, 1908. Dr. Harmon was married on December 27, 1910, to Erna Luck. The only child of the first marriage, Lyle, died on March 24, 1912; the only child of the second marriage, Victor Edwin, died on September 10, 1912.

When Dr. Harmon died at Jeffers on January 26, 1913, after a week's illness from pneumonia, he was survived by his wife; his parents, Mr. and Mrs. T. Harmon, of De Smet, South Dakota; two brothers, Lyle, of De Smet, and Timothy, of Sherburn, Minnesota; and two sisters, Mrs. Michael Kelly and Mrs. Kittie Sturgeon, both of Dickinson, North Dakota.

His funeral services were held at Jeffers in the presence of hundreds who esteemed him; burial was at Windom. The *Jeffers Review* said: "During Dr. Harmon's twelve years of practicing medicine at Jeffers, he has made many friends throughout the entire county. No night was too stormy, no roads were too bad for him to make a call and administer to the sick or wounded. . . . He was a good doctor. . . . Dr. A. J. Moe of Heron Lake Hospital says: 'He was an ideal practitioner; it seems he was a natural born physician, and he had a fine success.' He was a kind and freehearted man, always standing for correctness and principle. He was a faithful friend to all, and we regret our inability to compose a better tribute to his memory."

Johannes K. Moen (1867-1929) was born in Telemark, Norway, on March 3, 1867. He immigrated to the United States at the age of eighteen years and settled in Red Wing, Minnesota, where he attended the Seminary. He later enrolled in the medical department of the University of Minnesota, from which he was graduated in 1893; he was licensed in the state that year.

After his graduation Dr. Moen set up practice in Windom, Minnesota, where he remained until 1908. He was coroner and health officer in Windom for several years. About this time he suffered the loss of his library and office equipment in a large fire.

Dr. Moen purchased his first automobile, an Oldsmobile, in 1901. It was a doubtful blessing, because he experienced much trouble making his calls in it, owing to bad roads; most of the time when he used his car in the country, he had to get farmers to pull him to town with horses. During the winter of 1899, driving his team, he had some especially bad trips on professional calls that he made to Westbrook, thirty miles away, and to Storden, twenty miles. Because of blizzards, it was not unusual in that period for him to be away from home two or three days at a time.

In 1908 Dr. Moen spent some months in Europe for postgraduate study, and on his return in 1909 he began his long medical practice in Minneapolis. For several years he was head physician of the Scandinavian-American Fraternity in Minneapolis. He was a staunch Democrat, a Mason, and an active member of the Sons of Norway. He had literary talent in both prose and poetry, most of which he wrote in Norwegian. Among his many interests and hobbies were fishing, which he particularly enjoyed, and botany; he had an interesting garden of medicinal plants.

Dr. Moen died in Minneapolis in 1929. Surviving in 1948 were his wife, in Minneapolis, one daughter and two sons. One of the sons, Dr. Johannes K. Moen, was in medical practice in Minneapolis.

Joseph Boardman Noble (1859-1947), a graduate of Rush Medical College, Chicago, in 1886, began practice in Windom, Cottonwood County, Minnesota,

the same year. He was licensed in the state, as of Tower, on May 3, 1886, receiving certificate No. 1185(R). After two years in Cottonwood County Dr. Noble removed, or perhaps returned, to Tower, where he remained until about 1900; in this period he was owner of a hospital in Tower and was a member of the St. Louis County Medical Society.

From 1900 until his death at the age of eighty-five years, Dr. Noble was established in Waukesha, Wisconsin. There is record that he was a member and past president of the Waukesha Medical Society and member of the Wisconsin State Medical Society. He was appointed city physician of Waukesha in 1902, was for many years medical examiner for several large national insurance companies, physician to the Wisconsin Industrial School for Boys, for twenty-five years district surgeon to the Chicago and Northwestern Railway Company, and was on the staff of the Waukesha Memorial Hospital. Active in local civic affairs, he served as member of the library board and as alderman.

Dr. Noble died at the Waukesha Memorial Hospital on May 5, 1944, from cerebral arteriosclerosis.

Charles Wilbur (sometimes spelled **Wilbor**) **Ray,** who was born in 1856, was a graduate of the Bennett College of Eclectic Medicine and Surgery, of Chicago, in 1885. On May 26, 1887, then in St. Claire, he received Minnesota state license No. 1414 (E). In the next twenty-two years he practiced medicine in various localities in the state, in the following order: St. Claire, Blue Earth County; Owatonna, Steele County; Canton, Fillmore County; and Nicollet, Nicollet County. In 1900, after a period of study in the East, he moved with his family to California. It is said that he was again in Nicollet for several years, about 1907-1909. He returned to California, where he died in 1912 in Los Angeles.

A fuller account of Dr. Ray's life appeared in 1947 in *Notes on the History of Medicine in Fillmore County Prior to 1900* (Guthrey), in MINNESOTA MEDICINE.

James Fred Scott, born in 1873, was graduated in medicine from McGill University, Montreal, in 1899, and in that year began the practice of medicine in Windom, Minnesota. In 1900, Dr. Scott was in Mankato. In 1905, a resident of North Yakima, Washington, he was licensed in Washington. He was in practice in North Yakima as late as 1947.

Allen Smith, the first practicing physician of Cottonwood County, arrived in Windom from Ohio, as stated earlier, on October 10, 1871. Two years later he returned to Ohio, where he died not long after his return to the state.

(To be continued in the September issue)

President's Letter

WHY AN AUXILIARY?

During the recent war, more than ever before, we saw eloquent proof that a woman's auxiliary can be a truly social service group. It can, if fully utilized, be a powerful force for the advancement of the aims of the parent organization and for the benefit of society as a whole—plainly and simply, an instrument *for getting things done.*

We do not need to count the bandages that were rolled, the sandwiches and coffee, and home-like hospitality that were extended to our servicemen, the fund drives, the scrap drives, the conservation drives, and the hours of hard work that went into the hundreds of major and minor projects. No one can put a price on the value of the job that women's auxiliaries all over the country did toward the winning of the war—even to the extent of marching to the front and serving in the nursing corps and in the auxiliary units of the army and navy.

All of these valued services were performed in greater or lesser degree by members of our own medical auxiliary, but it behooves us to recognize that their peacetime service is no less significant and even more valuable to us in discharging our professional obligations. As individuals, we look upon our wives as helpful companions and valuable assets. The old quip that a wife is both a necessity and a luxury represents the two attitudes which we may take. We may regard our woman's organization as "just something to put up with—not much good, but harmless," or, if we are alert to its possibilities, we can delegate to it certain responsibilities for carrying out projects for which it is particularly well adapted and which in many cases we cannot undertake for ourselves.

We readily recognize the value of women as wives and mothers in the rôle of homemaker. But with their auxiliary group they are in a peculiarly advantageous position to strengthen our relationships with the layman and to interpret our ideals and aims to the public.

We should welcome this assistance; for surely certain aspects of our public relations are not to be slighted; we cannot afford to overlook the liaison value of our wives. There are instances where they can aid us immeasurably, where they can speak for us—where we cannot speak for ourselves—as in the field of public health education. They can, as a group, sponsor many worthwhile projects which have as their ultimate aim the spread of authentic health information, and they can conduct these activities without fear of criticism. The code of medical ethics does not forbid doctors' wives speaking in behalf of the advantages which adequate medical attention has over home remedies, self-medication and patent medicines.

It is only natural, furthermore, that the wife of a man who is respected in the community will also share some of that respect. It then follows that she should have a share in some of his community responsibilities. Among them would certainly be to inform and enlighten in matters of health.

Thus, in these times when the medical profession is engaged in a serious fight to preserve freedom of enterprise for itself and the world, we welcome the thoughtful, conscientious effort of the Woman's Auxiliary in our behalf. A bright future for service to humanity is before this group, and we are proud that they are willing to accept this challenge.

President, Minnesota State Medical Association

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

CORRELATION OF PRIVATE AND TAX-SUPPORTED HEALTH ORGANIZATIONS

THE interest of the public in health matters is manifest in its generous support of the numerous agencies devoted to the problems of tuberculosis, infantile paralysis, heart disease, cancer, rheumatic fever, high blood pressure, crippled children and adults, et cetera. We can foresee the need of a better co-ordination between the activities of these voluntary organizations and those supported by public expenditure of tax funds, notably by the United States Public Health Service.

Antituberculosis activities, supported by the yearly purchase of Christmas seals, were the first in the field, and the outstanding reduction in tuberculosis is partly a result of the publicity regarding tuberculosis prevention and health matters which have been this organization's main function and in large measure the result of the establishment of sanatoria at public expense. There has been no overlapping of activities in this field.

The response to the appeal for funds for research in poliomyelitis and the relief of its victims has furnished millions of dollars yearly for the National Foundation for Infantile Paralysis. The predilection of the disease for children has provided an emotional appeal which has resulted in the raising of funds out of proportion to the number of its victims. The addition of a second agency in the same field, the Kenny Institute, has increased this disproportion. We read in the Washington Report on the Medical Sciences of June 14, 1948, that a catch-all health bill (H.R. 6732) failed to pass in the last days of Congress, only because a committee report which was supposed to accompany the bill could not be found when the bill was called upon the floor of the House. The bill would have given the Surgeon General of the Public Health Service broad powers to establish research institutions for poliomyelitis and such other diseases as he might deem necessary, and furthermore to give financial assistance to existing poliomyelitis agencies.

The high toll of heart disease has aroused growing concern in various quarters. The Life Insurance Medical Research Fund, established in December, 1945, by the life insurance companies, spent a million and a quarter dollars in support of some eighty-nine research programs and fellowships in 1946 and 1947. The American Foundation for High Blood Pressure, with headquarters in Cleveland, has just announced the allocation of $75,000 for research in hypertension, arteriosclerosis, and associated conditions. The Variety Club, with headquarters in Minneapolis, has been most generous in its contributions to the study and care of rheumatic and other heart diseases. In June, Congress passed the National Heart Act aimed to curb cardiovascular disease by stimulating research, professional training and public control measures, which promises to lead up to a program which will be the largest ever undertaken by the U. S. Public Health Service. Approximately 3 million dollars have been appropriated to get the campaign started and to establish a National Heart Institute to be housed in the 40 million dollar clinical research center to be erected at Bethesda, Maryland. It is expected that eventually some $15,500,000 will be spent on the program annually. The bill was backed by the National Heart Committee and the American Heart Association. The American Heart Association and its affiliates now plan to conduct an annual campaign to raise funds from the public to be used partly for research and partly for public and professional education and improvement of facilities for diagnosis and treatment of heart disease. While such uses do not duplicate those of the Life Insurance Medical Research Fund, the question arises as to whether the new USPHS activities will not prove to be a duplication.

Cancer also presents a serious medical problem. The American Cancer Society has been conducting drives each year for the raising of funds to combat this disease and in its last campaign raised $12,111,000, some $284,000 having been raised in Minnesota. Last year Congress appropriated 14 million dollars for cancer work, $2,303,000

having been allocated for the construction of clinical research and laboratory facilities. The House included in this bill an appropriation of 8 million more to provide facilities and establish training projects relating to cancer. Research in cancer is to be included in the 40 million dollar combined hospital and research building being erected in Bethesda, Maryland. Much of this money will be spent by the National Cancer Institute, part by the U. S. Public Health Service in cancer research and grants-in-aid to other institutions and to individuals for cancer research.

Also passed by the last Congress was a bill providing for 2 million dollars for a National Institute of Dental Research at Bethesda, Maryland.

Each year the National Society for Crippled Children and Adults, Inc., puts on a campaign for raising funds for this worthy object.

The Medical Economics section in this issue of MINNESOTA MEDICINE contains information regarding a bill to establish a National Science Foundation to initiate and support basic science research, one of the four divisions of which would be medical research. That this bill had considerable backing is attested by the fact that it was passed by Congress but vetoed by the President. Will this bill be passed by the next Congress? If so, will it not duplicate the research provisions of the National Heart Act mentioned above?

The Federal government is apparently entering the medical research field in a big way by subsidizing such research in the medical schools and by establishing its own medical research institutions. The medical school of the University of Minnesota is one of seven medical schools in the country which receive over a half million dollars yearly in research and educational grants from the various divisions of the U. S. Public Health Service. Perhaps, with the present dearth of contributions for medical research from private sources, such federal assistance is necessary. It is favored by certain members of the profession.

It seems to be a general belief that if enough millions of dollars are available for medical research, the problems will be solved. History does not confirm this belief. The outstanding medical discoveries so far have not been dependent on millions of dollars but rather on a comparatively few medical research workers. Scientists with the qualities essential for research are few and far between, and funds can be easily dissipated in the name of research, if their expenditure is not judiciously supervised.

The status of medical research presents a confused picture and raises several questions. Are the funds raised through voluntary contributions to the various national organizations sufficient for carrying on adequate research? If not, is governmental subsidy necessary? If so, should participation by the government be limited to subsidy of existing research institutes, or should the government also carry on its own research programs? If the government is going to appropriate millions of the taxpayers' money for medical research, should the public be asked to contribute additional millions for the same purpose?

The demands being made on individuals and corporations for contributions, not only to societies involving medical activities but also to the great array of other charitable and philanthropic activities, have become well nigh unbearable. Individuals are not in a position to evaluate the many demands made for contributions. The various Community Chests have helped to solve the local charity problem but are not of assistance when it comes to the many organizations of national scope.

According to an editorial in the *New England Medical Journal* of June 24, 1948, a study is on foot to analyze the 88 million dollars spent in the vicinity of Boston in 1946 by tax-supported and voluntary agencies. Presumably this study will result in a clarification of the subject. Similar studies on a state-wide and national basis would be of great value.

RED CROSS BLOOD BANKS

At the close of World War II, a surplus of some 2 million pints of blood plasma was returned to the Red Cross. This was distributed to the various State Departments of Health and redistributed gratis to the various hospitals. The supply has been about exhausted.

The use of blood and its derivatives has greatly increased in recent years. Their value is by no means restricted to war needs, although in case of an atomic war, they will be invaluable. Their cost to patients and the difficulty in keeping blood banks supplied have proven serious problems in the past. The Red Cross, therefore, seriously considered the advisability of continuing its blood program following the war, and after

numerous regional meetings of Red Cross representatives and almost unanimous agreement, the Board of Governors of the American Red Cross gave its approval to the undertaking. Regional blood banks will be established all over the country providing the approval and co-operation of the local medical societies are obtained. Blood centers will collect the blood from volunteer donors and will finance the costs from Red Cross funds. It is anticipated that the project will cost from 3 to 5 million dollars the first year and probably more in succeeding years. Blood and its derivatives will be furnished without charge to all hospitals—civilian and governmental—for all patients irrespective of their financial status. A reasonable charge for administration will be allowed hospitals and physicians.

Already several Red Cross blood centers are in operation. Saint Paul is to have one of the first ten. With the approval and co-operation of the Ramsey County Medical Society, plans are under way to establish a center at 91 East Kellogg Boulevard near the present Red Cross headquarters. It is expected that operations will begin about November 1, 1948, for supplying hospitals in Ramsey County and its environs.

The Red Cross blood bank program requires the wholehearted support of the public and medical profession, if it is to be successful. In keeping with all other activities of the American Red Cross, the program is a philanthropic one. The public will be asked to donate blood in peacetime, as it did during the war, so that blood may be obtainable in sufficient quantities for the saving of lives. The problem of the great cost of blood transfusions is to be eliminated.

The program has received the approval of the AMA with the understanding that the establishment of blood banks shall be with the approval of the local medical society, and any difference of opinion as to the establishment or operation of a blood bank shall be arbitrated at state levels by joint committees from the state medical society and the American Red Cross. On a national level, the House of Delegates of the AMA, at its meeting in January, 1948, appointed a special committee to work with the physicians comprising the Advisory Committee of the American Red Cross. The two committees will continue to work together in this philanthropic venture.

As the undertaking is a long-term proposition and will require several years to reach full operation, it is urged that present blood banks other than Red Cross continue to function, with the idea that many may be taken over eventually by the Red Cross.

AMERICAN HOSPITALS

Almost 18 million Americans were admitted into the 6,173 hospitals of the United States in 1947, according to the 1948 American Hospital Directory compiled and published by the American Hospital Association. This represents an average of one of every eight Americans receiving hospital care.

Approximately 16 million patients, two million more than in 1946, were admitted to general hospitals during the year, the Directory reports. In addition, 40 million hospital visits were made by outpatients, those needing special tests or treatments without bed care.

The average cost of caring for a patient for one day in a general hospital rose from $9.39 to $11.09 in the year 1946-1947, according to the Directory. Yet the average income from patients was $9.71, leaving a daily deficit of $1.38 per patient to be made up through voluntary contributions and gifts from the public.

Part of the $2,354,344,000 expended by hospitals in 1947 was for the salaries of the 79 fulltime employes serving every 100 patients in all types of hospitals, the Directory states. General hospitals had approximately 151 employes for every 100 patients to maintain prevailing high standards of patient care. Hospitals spent about 400 million dollars more in 1947 than in 1946, because of higher wages, higher prices, and expanded services.

The average patient going to a general hospital in 1947 stayed for only eight days, as compared with 9.1 days in 1946, the figures show. This reflects the spreading practice of entering hospitals in earlier stages of illness, possible for increasing numbers of people through Blue Cross and other prepayment plans, as well as wider recognition of the value of hospitals, improved treatment methods, and early ambulation.

Hospitals in 1947 had total assets of approximately six billion dollars, which is more than $42 for every man, woman and child in the United States. Of that amount, general hospitals' plant valuation represents almost three and a half billion dollars, an average of $7,500 per bed.

"Ten years ago, in 1937, 9,221,517 patients were admitted to hospitals," George Bugbee, executive director of the American Hospital Association, reported. "During this ten-year span, hospital admissions have increased almost 100 per cent.

"The facts revealed by the Association's survey dramatically illustrate the increased recognition of the place of hospitals in the nation's health and welfare."

A GUIDE FOR PUBLIC HEALTH NURSING AGENCIES SEEKING TO ESTABLISH POLICIES AND STANDING ORDERS

(June, 1948, Revision—Recommended by the Committee on Public Health Nursing and approved by the House of Delegates, Minnesota State Medical Association)

Local public health nursing practices must be consistent with the medical practices of the community. In recognition of this fact and in the interests of the public welfare, the Minnesota State Medical Association, the Minnesota State Organization for Public Health Nursing and the Division of Public Health Nursing of the Minnesota Department of Health have jointly agreed upon certain minimum policies and standing instructions involving nursing procedures. They are herewith submitted as a basis for guidance of organized public health nursing agencies. It is intended that these minimum policies and instructions will be found sufficiently flexible to meet various local needs.

Agency Policies

1. An agency employing public health nurses should have its basic program and contemplated changes approved by the physicians in the community.

2. The nurse emphasizes the importance of medical care, but she does not recommend the selection of any one individual physician. Except as provided for in policy 10, she gives bedside nursing care and health instruction only under the direction of a licensed physician. Public health nurses working under the direction of local physicians may give and read various diagnostic tests provided approval has been given by the physicians of the community. Likewise, public health nurses may administer immunizing agents, provided they have received specific written authorization or direction for such procedure from the physicians of the community.

3. In special cases of economic need the public health nurses, after consultation and in co-operation with the family physician, may refer patients to the health facilities provided by public and private agencies.

4. The establishment of clinics or other health activities which involve medical service shall be undertaken only upon the approval of the County or District Medical Society, or by the physicians in the community.

5. Records of nursing care should be kept on file by the nurse. The nurse should make a written report to the physician or agency whose patient she has contacted. Such report may be given to the patient to take to the physician, or may be delivered directly to the physician.

6. Every public health nurse should understand and support the state and local health laws and regulations and keep in direct contact with the local and state health departments.

7. Every nurse engaged in public health nursing should become approved by the Committee on Certification, for which provision has been made in Section 145.10, Minnesota State Health Laws and Regulations.

8. It is suggested that all public health nurses, at the time of employment and periodically as requested by the employing agency or the State Board of Health, present a satisfactory personal health record which should include recent smallpox vaccination, evidence of immunity to diphtheria, and freedom from active tuberculosis, as determined by tuberculin tests and/or x-ray pictures of the chest, and other procedures as indicated.

9. Upon consent of the family physician, public health nursing agencies may assign simple nursing duties to persons who have had limited training for such work. Such persons shall receive instruction and supervision for their assignment from the public health nursing agency.

10. The training of public health nurses is carried out exclusively as a collateral service to the philosophies and practices of physicians and surgeons. Therefore, except under highly unusual circumstances, public health nurses should not be expected to answer to the directions of persons other than licensed physicians and surgeons. Provided, however, that public health nurses may carry out nursing functions under the direction of other licensed health practitioners insofar as the practices of the latter, in medical and surgical fields, are within the limits of their licensure, and insofar as such orders may be compatible with the training and experience of public health nurses to perform.

Standing Instructions for Care or Service of Patients

The content of health education to be taught by the public health nurse in the home, the school or the health center, and the quality and quantity of nursing care for sick persons, either under or pending medical direction, are matters of joint concern to the physician and nurse. The following recommendations are offered to nursing agencies as a guide for the establishment of standing orders to the nurse in her administration of nursing care, treatment and medication in those emergencies where no physician is in attendance or when orders have not been left by the attending physician or when the nurse is unable to reach the physician for orders. Before adoption by an agency, all such standing orders should be approved by local physicians.

Emergencies and Accidents—All nurses are expected to be familiar with the techniques adopted by the American Red Cross for first aid treatment and injuries, and in caring for such conditions she will limit herself to these accepted procedures. In the event of a severe accident, immediate medical care should be secured by calling the nearest physician or hospital if it is not possible to locate the family physician; and if the patient is a minor, the nurse should communicate with the parent or guardian immediately.

Communicable Disease Control—The control of communicable diseases is the responsibility, not only of the public health nurse and the official agency, but is also the concern of the medical profession and general populace. If communicable disease is suspected, the nurse should explain to the family the elementary principles of isolation, concurrent and terminal disinfection and such other measures which will aid in preventing the spread of dis-

ease. (See "Home Isolation Procedures," Manual for Public Health Nurses, Minnesota Department of Health.)

If the patient is attending school, the school official should be notified in writing in order that contacts of the patient may be properly observed. The health officers of the sanitary districts in which the school is located and in which the child resides should be notified of the occurrence of suspected communicable disease, as provided by Regulation 318 of the Minnesota State Health Laws and Regulations. The nurse is expected to make the patient as comfortable as possible and to isolate him from all other persons. Any of the following symptoms shall be considered sufficient reason for such isolation:

Fever 100° or more	Sore throat
Coryza	Vomiting
Rash	Inflamed eyelids
Running ears	Pediculosis
Skin lesions suggesting scabies or impetigo	

In aiding physicians in the control of preventable diseases, public health nurses are expected to co-operate with the local health officer and to follow the Regulations of the State Board of Health.

The nurse should teach families that immunizations are best done before the end of the first year of life, and thereafter repeated at the discretion of the physician. Group immunization programs should be conducted under the auspices or with the approval of a local medical society, which may secure available biologics from the Minnesota Department of Health. The nurse's contribution to such programs consists of preliminary education of the community, making the necessary arrangements for carrying through the programs, assisting the physicians when the immunizations are being performed, summarizing reports, and keeping local records of immunization.

Tuberculosis Control—Infectious and potentially infectious cases (active or with tubercle bacilli in sputum) preferably should be isolated at a sanatorium immediately following establishment of the diagnosis and procurement of such recommendation from the attending physician or health officer. Such cases, while awaiting admission to the sanatorium, should be completely isolated at home. (See communicable disease isolation procedure in Public Health Nursing Manual supplied by the Minnesota Department of Health.) Special attention should be given to adequate terminal disinfection after the patient has left the household. Hospitalization should also be advised for other forms of tuberculosis on the approval of physician. Medical examinations, including tuberculin tests and x-ray pictures, should be urged for all members of the family and other close contacts of tuberculosis cases. Where local medical society approval is had, the Tuberculosis Control Officer of the State Board of Health can arrange for mass x-ray surveys of a community.

Syphilis and Gonorrhea Control—As problems in relation to syphilis and gonorrhea are encountered or brought to the attention of public health nurses, all available information regarding these problems should be referred to the Section of Preventable Diseases, Minnesota Department of Health, for consultation and advice regarding future responsibility of the nurse. When cases are known to be under medical care, problems relating to them should first be discussed with the attending physician.

Public health nurses should always bear in mind that information relating to venereal disease should be kept confidential. (See Regulation 2510, Minnesota State Health Laws and Regulations.)

Health of Mothers—The public health nurse's work with mothers and infants is an important part of public health service. She should secure standing orders from individual physicians for treatment and nursing procedure to be carried out for these individuals.

In working with expectant mothers the aims should be to bring the women under early and continuous medical care; to teach the elements of prenatal hygiene; and to carry out nursing care or treatments ordered by the physician. Specific help which public health nurses may give to mothers includes: help arrange for delivery care for the mother and immediate care for the new baby; demonstrate the preparation of sterile supplies when a home delivery is planned; if possible, help arrange to have a registered nurse present during delivery when home confinement is anticipated. They give bed baths and perineal cleansing (demonstrate to attendant). They give treatments ordered by the physician (demonstrate to attendant). The nurses emphasize the value of rest and other aspects of hygiene during the involution period and the value of the postpartum medical checkup. In the event of postpartum hemorrhage, nurses give emergency care—send for the physician, apply gentle massage to the uterus, keep the patient quiet and warm, and carry out the measures recommended for the treatment of shock.

A most important phase of the maternal care is instruction in the value of breast feeding for the baby with its attendant physical and emotional preparation of the mother for a successful breast feeding experience. Infant feeding schedules shall be determined by the attending physician.

Health of Infants and Young Children—A most important phase of public health nursing is instruction in care, feeding and immunization of infants. Every effort should be made to contact the mother of the new infant within forty-eight hours after birth in the home or baby's return from the hospital.

The definite decline in breast feeding challenges the public health nurse to encourage mothers to nurse their infants. The nurse must be familiar with the various techniques involved. She must ascertain from the physician that there are no contra-indications.

The prophylactic protection of the baby's eyes and registration of birth as required by state law is the nurse's responsibility when there is no doctor in attendance.

The birth of a premature infant is an emergency in which the public health nurse must be prepared to function under the direction of the attending physician. A definite prearranged program of co-operation between the physician and the public health nursing service will enhance this program. The nurse's contribution of aid and instruction in maintaining body temperature, feeding

techniques, isolation and other nursing care can be invaluable.

The nurse should concern herself with guiding parents of preschool children in habit training, adequate nutrition, good hygiene and immunizations. Close co-operation should prevail between nurses and organizations such as the Congress of Parents and Teachers, American Legion Auxiliaries and others particularly interested in promoting such special health programs as health examinations, child health conferences, dental health projects, etc., for the preschool child.

Health of School Children—The public health nurse in school health work is usually under the immediate direction of the school administrator. In addition, the Nursing Advisory Committee or the School Health Council, each with medical, dental and lay representation, helps guide the service. The nurse consults with parents on problems of child health and environment and guides parents to other sources of aid which may be needed. The nurse co-operates with the school staff, parents, physicians and dentists in arranging for and conducting health examinations in such a manner that the examinations become an educational experience for all participants.

The school nurse aids in the control of communicable disease by helping parents and teachers recognize conditions for which the child should be isolated. Regulation 318 of the State Board of Health Laws and Regulations provides for reporting children who are ill to the school physician for medical examination. On the other hand, where there is no school physician "it shall be the duty of the teacher or head of the school to exclude from school all pupils, who, in his opinion, show signs of a communicable disease." A nurse may perform these duties when so directed by the school physician or the health officer.

Morbidity—Nursing service rendered by public health nurses to patients ill from any cause is included under this category. The public health nurse must make every effort to keep the physician informed of services she has given to the patient and progress she has observed. Except in services where the policies include bedside nursing, the public health nurse cannot be expected to give continuous bedside care to an individual: first, because of the need for equitable distribution of all phases of a generalized service to all sections of the community; and second, because of the possibility of disrupting the balance of a generalized program. However, where medical and hospital personnel are reduced, the public health nurse working under medical direction may render care to the sick in their homes for demonstration and teaching purposes, thus giving vital assistance to physicians as well as improving the care of the patient.

Whenever the public health nursing agency has assigned nursing duties to an auxiliary worker, a public health nurse will visit the case frequently enough to know that treatment and care are given as ordered by the physician.

It is generally accepted that the nurse's first morbidity visit may be made without there being or before there is a physician in attendance. Standing orders should include definite regulations regarding subsequent visits as well as policies to guide the nurse on the first visit. At the first call every effort should be made to have the patient contact the physician of his choice. The physician will then give orders to the nurse for subsequent visits. Written or telephoned reports to the physician are desirable, both for the first and subsequent visits. Ordinarily, repeat home visits, when there is no physician in attendance, are made chiefly to urge medical supervision and to secure diagnostic information to be reported to the attending physician or health officer.

Crippled Children's Services—The State Service for Crippled Children requires full co-operation of all interested local agencies to fulfill its functions. The prevention and correction of physical handicaps due to bodily defects needs supervision over long periods of time. The nurse works with the individual physicians in the care and supervision of these cases.

Due to her close contact with the patient, the public health nurse may discover deviations from the normal—not only in the infant, but also in the preschool and school child. She helps parents make precise and concrete plans for the regular and continuing medical care of the crippled child.

Records of local orthopedic and cardiac cases and those of other physical defects should be as complete as possible and checked frequently with the state field representative of Crippled Children Services. The nurse's duties in the individual case lie in the education of the family in the patient's care, the demonstration of and instruction in home nursing, the general health supervision of the afflicted child, and the supervision of therapeutic exercises recommended by the physician in charge. The nurse will aid the rehabilitation of the patient in every way.

PRACTICE OF MEDICINE IN RAMSEY COUNTY

(Continued from Page 866)

to exclude or curtail the activities of the general practitioner. However, it is the duty of all hospital staffs who are true to their profession to establish regulations necessary to prolong life, to reduce mortality and morbidity. It is to this end that self-imposed rules are laid down by the staff which include more consultations, all for the benefit of the patient, the doctors, and the hospital.

In closing, I would say, be true to yourselves and your profession so that you will always be proud of your profession and your profession will be proud of you.[4]

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MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

CONGRESS PASSES RECORD NUMBER OF HEALTH BILLS

Public health, medical and hospital legislation, was enacted into law in record-breaking proportions during the second session of the Eightieth Congress just recently completed. Federal health insurance again failed to make the grade.

Bills adding new duties to the United States Public Health Service and rearranging certain of its administrative functions; measures applying to the Veterans Administration and certain other general proposals were written into the statute books.

A number of desirable pieces of legislation such as the National Science Foundation and federal subsidation of local public health units were left behind in committees of the House and Senate. That raises the question if there might be a possibility of action on them during the special session. However, according to a Presidential statement issued at the time of his calling of the session, other "must" legislation and more urgent matters such as civil rights, housing, wages and the possible repeal of the Taft-Hartley Labor Act, will occupy the lawmaker's time.

The first session in 1947 of the Eightieth Congress passed only a handful of medical and health bills compared to the tremendous output at the second session. The heated controversy over whether to federalize or not to federalize medical care raged during both sessions. Hearings on two opposing bills—S.545 and S.1320—filled nearly six volumes.

Heart Disease and Water Pollution Attacked

Private efforts as well as government activities to combat heart disease were given a substantial boost by the National Heart Act, one of the bills just passed. This Act provides research grants, fellowships, nationwide control programs and other projects much like those for attacking cancer, venereal disease and mental illness previously instituted.

A National Advisory Heart Council of heart disease experts together with laymen is established with no ceiling on appropriations. Also a National Heart Institute to be located at Bethesda, Maryland, is authorized.

The first comprehensive water pollution law in national history was passed by the Eightieth Congress. Administering the law becomes the responsibility of the Surgeon General of the Public Health Service and consists of helping states, industries and municipalities in planning and carrying out remedial programs.

The major problem in preventing water pollution is felt to be one of disposing of industrial wastes. Under the new law, funds are authorized for loans to construct municipal water treatment plants, investigations of existing preventive measures and construction of a Public Health Service laboratory at Cincinnati.

Dental Research Promoted

A bill to set up a National Institute of Dental Research and an advisory council similar to the heart group was also passed. It authorized $2,000,000 for the construction of an Institute to be located at Bethesda, to equip it and to provide grants-in-aid.

The Hospital Survey and Construction Act was liberalized by another measure. The Virgin Islands are now eligible, and states are granted additional time in which to enact legislation necessary before they can receive federal funds.

Two bills are aimed at improving health in the Philippine Islands. One bill authorizes training of a limited number of Filipinos in public health methods and administration in U. S. schools together with the establishment of public health training centers in the Philippines. Another sends financial aid to Filipino veterans of the Japanese resistance movement.

Several other measures were enacted which pertained to veterans. Research on various pros-

thetic and sensory appliances is authorized; intern training is established in VA hospitals whereas formerly there were only residencies; service-connected paraplegia cases are granted financial assistance to enable them to acquire or remodel dwellings suited to their needs; and several tropical diseases are added to the list of ailments for which service connection can be claimed in obtaining medical care at government expense.

U. S. Joins World Health Organization

United States membership in the World Health Organization was finally passed by both houses of Congress after a compromise had been reached which was well padded with safeguards and loopholes. The bill places a ceiling on this nation's share of expenses of WHO, and the stipulation is made that our membership will not commit the United States "to enact any specific legislation" regarding matters referred to in the WHO Constitution. The U. S. reserves its right to withdraw from WHO on a one-year notice.

Our representative on the WHO executive board will be a graduate of a recognized medical school who has spent not less than three years in active practice. He will be appointed by the President and confirmed by the Senate. The first meeting of the World Health Assembly took place at Geneva on June 24. The President sent three delegates: Drs. Thomas Parran, James R. Miller and Martha Eliot.

Several other miscellaneous measures relating to health were passed. The Food, Drug and Cosmetic Act was amended to make it a criminal offense to adulterate or misbrand drugs, foods, therapeutics or cosmetics even after interstate shipment has been completed and they are ready for retail sale. The federal government also is doubling its annual contribution to the Gorgas Memorial Laboratory in Panama, which is engaged mainly in tropical disease research.

Exposed x-ray film may now be imported free. No physically handicapped person may be discriminated against in connection with civil service appointments, transfers or promotions.

Science Foundation Dropped

Among the many important bills affecting medicine, adversely or favorably, which failed to get out of committee was S.2385 to establish a National Science Foundation. This is the second time attempts to establish the foundation have failed. Last year President Truman vetoed a similar measure.

Briefly, the National Science Foundation would initiate and support basic science research; would develop and encourage adherence to a national policy with regard to research and education in the sciences (including medical science); would appraise impact of research on industrial development and the general welfare; would enable persons with ability to receive scientific training through scholarships and graduate fellowships; and would correlate its program with that of individual and public research projects. Also it would foster interchange of scientific information among the scientists of this country and abroad.

The National Science Foundation would be an independent agency of the federal government with a director and 24 members appinted by the President. An executive committee of nine would implement the policies developed by the foundation. There were to have been four divisions—(1) medical research, (2) mathematical, physical and engineering sciences, (3) biological sicences and (4) scientific personnel and education, which would grant scholarships and graduate fellowships.

Fortuantely, S.140, a bill to create a Department of Health, Education and Security with its head a member of the President's cabinet also failed to get out of committee. The two opposing "health insurance" measures, S.1320 (the Wagner-Murray-Dingell Bill of 1948) and S.545, the Taft-Smith-Ball-Donnell Bill, were unable to get past the discussion stages.

COMMITTEE HOLDS LINE ON HEALTH INSURANCE

A thorough investigation of the pros and cons of compulsory national health insurance, which is to be continued by Congressional action, was undertaken by the subcommittee on health of the Committee on Labor and Public Welfare of the Senate. Thus the line was held on health insurance through one more Congressional term.

To this subcommittee were referred the various measures calling for national health plans; and under the leadership of Senator H. Alexander Smith, the group has employed every available means to get at the facts and obtain an impartial view of our national health status before giving the go-ahead signal to any remedial programs.

During the closing sessions of the Eightieth

Congress, Senator Smith submitted a detailed report of his subcommittee's activities. At that time his request that the work be allowed to continue was granted; a full report is to be made to the next Congress not later than March 15, 1949.

In its search for facts and opinions on health legislation, Senator Smith's group polled the governors of the 48 states and found that none of those answering the poll favored a federally administered medical care program. An impartial research agency, the Brookings Institution, was also asked for its opinion. This group brought in a report which was very damaging, to say the least, to the pro-nationalists' arguments; compulsory health insurance rated the Institution's unqualified veto.

The subcommittee considered no less than twenty-seven bills on proposed health legislation during the last session of Congress, it was revealed. Of these, the two comprehensive and most important proposals were, of course, S.1320 and S.545. These bills, which represent the two opposing sides of the national health controversy—one side insisting on federal control and the other upholding the rights of the individual states to set up their own programs—contain provisions which affect, overlap and duplicate the contents of most of the other bills considered by the committee. For that reason, the most of the subcommittee's time was taken up with considering them. Twenty-six days of hearings were held on S.545 and S.1320, with a number of government officials and heads of national groups being called in to testify.

Fundamental Issues Analyzed

In the report to Congress, Senator Smith analyzes the basic issues which must be considered in designing federal health measures. First and foremost, Senator Smith points out, there is the question as to whether a serious national health problem actually exists. This is debatable and involves consideration of the state of health of the population; the distribution of medical, hospital, dental and other health services and whether the majority of the population has access to such services.

Another important consideration is the fundamental question as to whether it is necessary for the federal government to expand its operations in the field of health. Available evidence suggests that wide-scale federal intervention, particularly in the field of medical care for individuals, may not be sound practice.

A third fundamental question is the methods or systems to be employed in providing medical and health services to individuals in the event of further expansion in this field, for example, the grant-in-aid system to assist states in developing their own health programs and the compulsory health insurance plan wherein the people are taxed to support a central health fund.

The fourth consideration that Senator Smith points out is that each piece of proposed health legislation should be considered in its proper relation to other pending matters, rather than individually. Moreover, health legislation should be considered with regard to other broad welfare programs of the government. The long-range effects of such proposals as compulsory health insurance and wide-scale grants-in-aid to states when their costs are added to the burdens of existing programs should be considered.

A vital question is that of selecting the proper administrative organization for dealing with health functions. At present, health programs are widely scattered throughout various departments with a sad lack of co-ordination. Last, but not least, Senator Smith concludes, there is the fact, often overlooked, that health simply does not exist in a vacuum. It is the result of an interplay of a vast number of factors. Providing for medical care alone will not meet other needs that exist nor insure good health for the nation. It is extremely doubtful that people can be legislated into good health.

With Senator Smith on the subcommittee on health are Senators Ball (Minnesota), Donnell (Montana), Murray (Montana) and Pepper (Florida).

ROLE OF COUNTY SOCIETY REAFFIRMED AT AMA MEETING

The County Medical Society—its part in medical organization and its responsibilities to its membership and the public—was discussed at the Grass Roots Conference of County Medical Society Officers, which was a prominent feature at the recent American Medical Association meeting in Chicago.

The AMA meeting this year was well attended. Total registration was 11,963 fellows. Doctors' wives, guests and exhibitors brought the total attendance to nearly 22,000. The County Offi-

cers' meeting which was held on the Sunday preceding the meeting proved popular and valuable.

At the meeting it was pointed out that the size and spread of the county societies' activities vary in accordance with the locality in which they are located. The problems of organizational responsibilities vary widely and are often complex. Interesting background information concerning the county medical society's relation to its respective state medical association as a component of the American Medical Association was presented.

Problems in programming were also discussed, and it was shown that here again each society has a different set of problems to meet, depending on the locality and facilities available—whether programs should be held once a month or once a week; whether well-known outside speakers should be brought in or the program should be prepared and presented by local society members.

Name "Organized Medicine" Deplored

It was suggested that the name "organized medicine" should be changed to "scientific medicine," a suggestion which might be used to great advantage from the standpoint of public relations.

Among the pressing problems present at the local level which need solving and which were discussed at the meeting were night calls, uniform fee schedules for indigents' care and county society participation in local activities. It was emphasized that no health agency should be overlooked or overemphasized by the county medical society. The topic of Community Chest and the place of the medical profession in the drive for funds was emphasized both from a community service angle and as a public relations gesture.

Health councils were stressed as projects in which the county medical society should not only participate, but could well afford to take the lead.

The major burden of public relations was placed squarely on the shoulders of the local organization as the basic unit of our medical structure. In his president's address, Dr. Edward L. Bortz emphasized the position of the county society by calling public relations the "field of human relations," which brings the problem right down to the individual physician.

As the basis for an active society, the great importance of carefully selecting and maintaining membership was discussed. Indoctrination courses on ethics for new members was recommended.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul, Minnesota

Julian F. DuBois, M.D., Secretary

Health Food "Doctor" Pleads Guilty to Violation of Basic Science Law

Re State of Minnesota vs. "Dr." Lloyd C. Shanklin.

On July 14, 1948, Lloyd C. Shanklin, fifty-four years of age, with no permanent address, entered a plea of guilty in the district court of Hennepin County to an information charging him with the crime of practicing healing without a basic science certificate. Shanklin was sentenced by the Hon. Lars O. Rue to a term of one year in the Minneapolis workhouse. The sentence was stayed upon condition that Shanklin return the money he had received while giving so-called health lectures at the Andrews Hotel, Minneapolis, just prior to his arrest.

Shanklin was arrested July 9, 1948, by Inspector Bernath of the Minneapolis Police department following a report that Shanklin was to give a course of three health lectures at a reduced price of $15, the usual price being $75. As a special inducement, Shanklin was going to give $3 worth of vitamins and health food to each person attending his lecture course. Shanklin was arrested before he had much of a chance to proceed with his lecture course. Shanklin stated that he was born in Lynn County, Iowa, and that while he was not a high school graduate he claims to have studied many subjects including health, sex, foods, religion, et cetera. However, he had no diplomas and admitted that he was not licensed in any state to practice any form of healing.

Shanklin admitted that he had been arrested in New York City on two occasions for similar violations in 1942 and 1944. Shanklin claims to have been on a lecture tour in Ohio before coming to Minnesota. He stated he lived in Stanberry, Missouri, from 1914 to 1918 and that he owned an orange grove in Homestead, Florida, for ten years prior to 1945. He also had on his person a card indicating he had lived in Indianapolis, Indiana.

Itinerant Health Lecturer Pleads Guilty to Illegal Practice of Healing

Re: State of Minnesota vs. Edna Evans, also known as Fra'Zee Evans.

On July 16, 1948, Edna Evans, also known as Fra'Zee Evans, sixty-six years of age, giving her home address as 723 So. Mansfield, Los Angeles, California, entered a plea of guilty to an information charging her with the crime of practicing healing without a basic science certificate. The plea of guilty was entered before the Hon. Paul S. Carroll of the district court of Hennepin County, Minnesota. Upon recommendation of the county attorney and legal counsel for the Minnesota State Board of Medical Examiners, Judge Carroll imposed a fine of $500 or, in lieu of the fine, twelve months in the Women's Detention Home. Mrs. Evans paid the fine at once and told the Court that she had given her last health lecture.

Mrs. Evans was arrested July 15, 1948, after giving three health lectures at the Leamington Hotel, Minne-

(Continued on Page 923)

Minnesota Academy of Medicine

Meeting of March 10, 1948

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, March 10, 1948. Dinner was served at 7 o'clock and the meeting was called to order at 8:10 by the president, Dr. T. A. Peppard.

There were forty-four members and one guest present.

Minutes of the February meeting were read and approved.

The scientific program consisted of two theses.

MALIGNANCY OF THE SKIN

CARL W. LAYMON, M.D.
Minneapolis, Minnesota

Malignant neoplasms of the skin are usually of epithelial or connective tissue origin, the former being called epitheliomas and the latter sarcomas. Epitheliomas are far more common than sarcomas. In general, cutaneous malignancies possess features which are essentially injurious to the host and thus differ from benign new growths. Among these features are: tendency to infiltration, local destructive properties, formation of metastases, recurrence after removal, local interference with function and general toxic action of absorbed tumor products. In this paper the lymphoblastomas will not be considered.

Sarcoma

Malignant connective tissue tumors are rare in the skin. They are of various structural types such as the spindle, mixed, round celled or fibrosarcoma. They can occur on or beneath the skin anywhere but are especially frequent in the inguinal regions, thighs, and buttocks. They vary greatly in size from a few mm. to several cm., are soft or extremely firm, of the color of skin to red or bluish-red and are single or multiple. The clinical picture of cutaneous sarcoma is frequently nondiagnostic—hence histologic study is necessary. The prognosis depends upon the histologic findings and is fairly good in fibrosarcoma. In malignant and undifferentiated round-celled sarcoma metastasis may occur in the lungs, resulting in death. Surgical excision is the therapy of choice since most of these lesions are radioresistant.

Multiple Hemorrhagic Sarcoma of Kaposi.—The lesions in this special type of sarcoma are either doughy infiltrated plaques or pea to bean-sized reddish or reddish-purple nodules. Telangiectasia may be a prominent clinical feature. The individual lesions may persist, disappear or ulcerate. Almost all cases occur in males. The extremities are most frequently involved, especially the lower, although lesions may be present anywhere on the body. The course may be extremely rapid, death having been known to occur within a few months. The average duration of the disease is from five to ten years, although cases have been reported in which the course was as long as twenty-five years. Almost any organ in the body may be involved but especially the gastrointestinal tract, liver, lungs, and the retro-peritoneal and mesenteric lymph nodes. Anemia, eosinophilia, and monocytosis may be present. A combination of arsenic internally combined with judicious roentgen therapy is the most satisfactory method of treatment. Although complete cure is almost unheard of, life may be prolonged many years by proper treatment.

Dermatofibrosarcoma Protuberus.—This disorder usually begins with small, hard nodules, which gradually enlarge to form thick, sclerotic plaques. On the latter, tumors subsequently develop which are sessile, pedunculated or mushroom-like. Occasionally the lesions become ulcerated and form vegetating masses. The sites of predilection are the abdominal wall, chest, upper and lower extremities, back and inguinal regions. The treatment of choice is surgical extirpation.

Hemangio-Endothelioma.—A hemangio-endothelioma is a tumor possessing low-grade malignancy, a precise histologic structure and is composed essentially of blood spaces and vessels in different stages of development. The blood does not circulate through the tumor mass because of the immaturity of many of the vessels. True endothelioma of the skin does not exist, for the origin of an endothelioma must be from endothelially lined structures such as blood or lymph vessels; therefore, the so-called endothelioma of the external surface is either a hemangio-endothelioma or a lymphangio-endothelioma. Many so-called endotheliomas are really epitheliomas or sarcomas.

The tumor may occur on almost any part of the body. It varies in size from a few millimeters to several centimeters and is usually dark red in color. Most of these tumors are moderately soft in consistency and may or may not be surrounded by satellites. This type of tumor frequently ulcerates, usually following trauma, and bleeds profusely. Because of its infiltrative nature it may become attached to underlying structures such as cartilage or bone or to the overlying skin. In the latter case a pedunculated tumor may form. The lesion is usually not tender nor painful when manipulated.

The degree of local malignancy is variable. In some cases hemangio-endothelioma is definitely benign. Certain cases are malignant enough to penetrate deeply although the ability to metastasize is extremely low. It is questionable whether subsequent growths should be re-

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From the Division of Dermatology, University of Minnesota, H. E. Michelson, M.D., Director, and the Dermatology Service, Minneapolis General Hospital, S. E. Sweitzer, M.D., and Carl W. Laymon, M.D., Chiefs. Inaugural Thesis read before the Minnesota Academy of Medicine, at its regular monthly meeting of March 10, 1948.

garded as metastases or lesions of multicentric origin.

In most cases excision is sufficient to effect a cure, although hemangio-endotheliomas are responsive to radiation. Recurrence may occur although the recurrent tumor seems to be as amenable to treatment as the original growth. The prognosis as to life is good.

Epithelioma

Practitioners should never forget the following aphoism: in every patient over forty years of age one must rule out epithelioma in every plaque, nodule, or ulcer which doesn't heal within a reasonable period of time especially if the lesion is located on the face. The value of histologic examination cannot be overemphasized. The histologic types include basal cell, basal squamous cell and squamous cell epitheliomas. If the muco-cutaneous junctions are excluded, basal cell epitheliomas are more frequent than the squamous cell variety. If however one includes the muco-cutaneous junctions, squamous cell epitheliomas are more frequent on account of the relatively great number of epitheliomas of the lip. Mixed cell or basal squamous epitheliomas occur in from 10-20 per cent of the cases.

Approximately 80-90 per cent of all epitheliomas of the skin occur about the face and neck. Although certain locations may suggest the type of epithelioma, final diagnosis must depend upon the microscopic findings. As a rule basal cell epitheliomas occur most frequently about the nose, eyelids and the anterior portion of the face above the level of the nose. The squamous cell type occurs more frequently about the ears, on the posterior part of the face and below the level of the nose. Epitheliomas of the hands, lips, and genitals are almost invariably of the squamous cell type. In general, the basal cell variety progresses much more slowly than the squamous cell.

There are certain conditions which predispose to the development of cutaneous epithelioma, among which are radiodermatitis, dermatoses such as lupus erythematosus and lupus vulgaris, varicose ulcers, scars following burns and wounds, long exposure to sun and wind, the ingestion of arsenic and chronic irritation from substances such as tar and oil.

Epithelioma of the skin usually begins as a nodule which gradually enlarges to form a plaque which is characterized by peripheral activity in the form of a pearly border. The malignant cells usually outgrow the blood supply so that an ulcer sooner or later forms. There are several special types such as the scar, button, cystic, or rodent ulcer. Much more rapid growth and tendency to metastasize characterize the squamous cell variety. Histologic examination of all suspected epitheliomas is not only justified but urgently indicated. Scalpel surgery, irradiation, cauterization or desiccation are all effective in the treatment of epithelioma of the skin when properly used.

Superficial Epitheliomatosis.—This is a distinct type of epithelioma occurring occasionally as a solitary plaque but usually as multiple lesions limited as a rule to the trunk and face. There are two varieties: one dry, in which there are superficial scaly plaques somewhat resembling psoriasis but characterized by a very fine thread-like, elevated pearly border, and a second less common eczematoid type which suggests extramammary Paget's disease. Superficial epitheliomas usually perist either unchanged or slowly growing for many years. In the slow-growing types the lesions may be relatively radio-resistant so that destruction or excision is the therapy of choice. Other more rapidly growing lesions may respond to X-radiation.

Epithelioma of the Lip.—Epithelioma of the lip comprises one-third of all cutaneous epitheliomas. It occurs on the lower lip in 95 per cent of the cases and almost always after the age of fifty and almost exclusively in males. The lesions are indurated nodules with or without ulceration. In general, they may be divided into: (1) the papillary type which has a definite upgrowth from the surface, and (2) the infiltrative type which is a more penetrating variety. The lesions eventually metastasize to the submetal and submaxillary lymph nodes. About one-third of all patients who have epithelioma of the lower lip die even though the disease is easily cured if properly treated in the early stages. After metastasis has occurred the involved nodes compress the organs of the neck and become ulcerated and infected. Remarks concerning the therapy of epithelioma in general also apply to epithelioma of the lower lip. Either surgical excision, radiation or destruction suffice if thoroughly and properly done. Routine dissection of the lymph nodes of the neck is not advisable since many observers have found that if the lymph nodes are not palpable at the time the primary lesion is eradicated metastasis rarely occurs.

Xeroderma Pigmentosum.—Xeroderma pigmentosum is a rare disease which is characterized by hypersensitivity to light followed by hyperpigmentation, atrophy of the skin, telangiectases and warty and malignant growths. The disorder has its onset early in life, although occasionally it begins in adults. In most instances sunburn following mild exposures to light, signals the beginning of the disease. Following this intense freckling usually occurs on the exposed surfaces of the body. Later, dilatation of blood vessels, warty growths, and keratoses appear, and still later malignant changes occur, most commonly basal cell epithelioma but occasionally the squamous cell type. Photophobia and lacrimation are prominent symptoms. The course of the disease is variable, but in almost all cases, however, the patients ultimately die of cancer. No treatment had been found which affects the final outcome of the disease. The avoidance of exposure to sun and the use of protective lotions is urgently advised. The treatment of the epitheliomas which develop is the same as that of epithelioma in general.

Atypical Forms of Epithelioma

Bowen's Disease.—This disease is considered by some to be a precancerous dermatosis while others feel that it is a highly specialized form of superficial epithelioma. It was first described by Bowen in 1912 as a solitary lesion composed of large papules or nodules and re-

sembling a nodulo-ulcerative syphilid. The lesions are usually located on the trunk and run an extremely slow course. There may be discoid plaques or nodules which are firm, dark brown, and elevated. Ulceration may supervene. There is usually an arciform configuration. Cases have been reported in which squamous cell epithelioma eventually developed with metatasis and death. Surgical excision is the treatment of choice as the lesions are radio-resistant.

Paget's Disease.—Paget's disease is a specific and rare form of malignancy which manifests itself almost exclusively around the nipple, especially in the female sex although cases in males have been reported. It is characterized by an early eczematoid stage and the presence microscopically of peculiar hydropic cells although in some cases the lesions are dry and psoriasiform. The borders usually remain sharply defined and the area gradually becomes indurated and infiltrated. Retraction of the nipple may be present or absent. In practically all cases there is an underlying carcinoma of the breast either independent of the cutaneous lesions or extending and connecting with them in the form of an adenocarcinoma or intraductal carcinoma. Treatment therefore is surgical. Simple amputation of the breast or radical amputation plus dissection of the adjacent nodes may be indicated depending upon the findings.

Nevocarcinoma (melanocarcinoma or malignant melanoma).—This type of tumor is the most malignant and rapidly fatal of all cutaneous neoplasms. It usually begins as a dark brown or blue-black nodule from a few mm. to several cm. in diameter. A history of preceding pigmented nevus is obtained in from 30-50 per cent of the cases. Many observers believe that nevocarcinoma originates only from the epidermal-dermal type of nevus which has also been termed junction nevus. Nevocarcinoma, however, may develop from apparently normal skin. The lesions as a rule first metastasize locally developing firm, dark, satellite nodules. The adjacent lymph nodes involved next followed by metastasis to any of the internal organs but especially to the liver and lungs. Nevocarcinoma may develop at any age although the average is fifty years. The disease appears about equally in both sexes. This type of malignancy occurs especially on exposed surfaces, particularly the face and extremities and especially the feet. Attention should be called to a special type—the so-called melanotic whitlow which may resemble an ordinary felon but which is surrounded by pigmented spots or streaks. Radical excision is the treatment of choice. Prognosis of course depends upon recognition of the early stages of the disease.

In conclusion it may be said that malignancy of the skin can, in the majority of instances, be successfully treated either surgically or by a number of physical agents. Each case requires individualization since one can so frequently arrive at the same result by one or a combination of several methods. The well trained therapist should not be overly enthusiastic for one method and should be prepared to use the agent best suited for each case. He should in general use that method at which he is most adept, keeping constantly in mind that the first attack on cutaneous malignancy is usually the most effective and for this reason should be well chosen and if possible complete, so that further therapy will not be necessary. Insufficient treatment, whether it be surgical, roentgenologic or otherwise, is to be heartily condemned.

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Discussion

DR. H. E. MICHELSON, Minneapolis: I am very pleased and proud of Dr. Laymon's presentation of cutaneous cancer. I think those of us who deal with skin cancer look upon it more as a problem and not as a disease and, in so doing, we are not satisfied with our present status but try to improve things wherever possible. Two groups of doctors see skin cancer—dermatologists and general practitioners. There should be no great difference in their ability to diagnose skin cancer. It is a rather simple diagnosis. The only advantage we have is that we are more suspicious and more willing to perform a biopsy. Since we, as dermatologists, see many skin cancers, we have a distinct duty to the public and to the profession. I think the public has the right to expect of their doctors a written clinical and microscopic diagnosis and that their doctors should give them in writing just what treatment was given so that if the patient wishes to seek further advice or if there is a recurrence, they will have exact information about what was done. Our duty to the profession is to point out the shortcomings of present-day diagnoses and treatment and to not be satisfied but to continue to look for better treatment for there is much yet to be expected and we must not become content with what we are doing because the results seem to be good.

DR. PAUL O'LEARY, Rochester: I have enjoyed Dr. Laymon's presentation very much. In almost twenty-five

years of experience with the grading of epitheliomas, as suggested by Dr. Broders, I have learned to place much faith in it. In an individual with a grade 3 or 4 carcinoma about the mouth, it gives me much satisfaction when glandular dissections are done of the area drained by the malignancy. All lesions that appear to be basal cell epitheliomas clinically are not so under the microscope and for the occasional case in which the microscope reveals a higher degree of malignancy than was suspected clinically, a more radical therapeutic procedure accordingly results in a higher incidence of cure.

One more point that I would like to discuss very briefly is my recent experience with the use of sodium pteroyl triglutamate, under the trade name of Teropterin, in the treatment of cutaneous malignancy. You may recall that at the meeting of the American Chemical Society last year there was some publicity given as to the value of this remedy for treatment of cancer. I have used it only in individuals in whom x-ray therapy and surgical procedure were no longer advisable either because of the extent of the lesion and metastasis or because x-ray therapy had been given to the limit. In other words, we have used it essentially in cases which were hopeless. I have treated some twenty-eight cases, including five with metastatic melanoma, without any encouragement. Today, however, I saw a woman whom we treated last fall, who had a primary melanoma in the cheek with a large gland in the side of her neck, diagnosed under the microscope. When treatment was started she had some metastatic nodules elsewhere throughout the skin and following treatment she said the nodule at the angle of the jaw (in other words, the original metastatic lesion from the primary) had disappeared. Unfortunately, however, in spite of the disappearance of this lesion she has continued to develop other metastases in her skin.

There have been no reactions from the Teropterin; in fact, it seems to be quite an inert product. I have been informed that there are several cases in Boston which have been under treatment for more than a year, in which it would appear that metastasis had been arrested, but the patients are still under observation.

DR. JOHN MADDEN, Saint Paul (by invitation): I think that everything that need be said has been said. I enjoyed Dr. Laymon's presentation very much.

DR. F. W. LYNCH, Saint Paul: Dr. Laymon has thoroughly and completely discussed the subject of malignancy of the skin. In such a discussion one must always face the question as to the most suitable treatment. It seems evident that carcinoma of the skin is going to be treated not only by dermatologists, but also by surgeons, radiologists, and general practitioners. A treatment that is most effective in the hands of one specialty may prove to be less so in the case of another group of physicians. Even within a specialty there will be individuals who will give more effective treatment by one method than by another. In general, the best results will be obtained by using the method with which one is most familiar. This is not entirely true and the best therapist will be the person who is capable with several methods of treatment and can choose from them. When an individual cannot use several methods, it is probably better that there be frequent reference of patients to other physicians.

Dr. Michelson commented on the importance of the individual and his response to the carcinoma. Dr. Leven will clearly recall a patient whom I have seen with him. This patient has basal cell carcinoma proved by repeated biopsies, but the process is obviously highly malignant in the sense that the lesions infiltrate widely and deeply in spite of the microscopic appearance of relatively benign tumor cells. This is the most obvious example that I have seen with such a complete lack of resistance to invasion by carcinoma of a basal cell type. It seems likely that there are great variations in the individual's response in other cases. In the treatment of cancer there are, then, several points to consider: first, the physician with his past experience, technical abilities, and available equipment; second, the lesion with its clinical features of invasiveness, destructive tendency, or hypertrophic growth. The microscopic nature of the lesion is also highly important. Thirdly, the response of the individual to the carcinoma can often be judged by the clinical appearence of the lesion, but this will not be true when the lesion is in an early stage of development. Choice of treatment must be dependent upon an analysis of these factors which have been listed. The highest effectiveness will be achieved by early and highly skilled treatment.

DR. S. E. SWEITZER, Minneapolis: I want to congratulate Dr. Laymon—there is not much more that can be added to the paper. My view of these epitheliomata is that some doctor has seen them and dismissed them as not amounting to very much, and said that we will watch them. There is no reason for watching. These lesions should be biopsied and proper diagnosis made, and treatment started right away. Then we will not see any of these neglected cases with such extensive involvement.

DR. CARL LAYMON, in closing: There is very little to add and I thank all of the men for their discussions. I think Dr. O'Leary's point regarding the grading of epitheliomas is well taken. It is an important additional help in the appraisal of the case under consideration. It should be emphasized that a patient who has had an epithelioma of the skin is apt to develop other lesions at other sites at a later time even though the initial lesion has been successfully treated.

I thank the members for the privilege of being here.

OCULAR PSYCHONEUROSIS WITH PARTICULAR REFERENCE TO ANXIETY REACTIONS

EDWARD P. BURCH, M.D.

Saint Paul, Minnesota

It has been stated with considerable justification that an uncomfortable eye very frequently mirrors an uneasy soul. Despite this observation a survey of modern ophthalmic literature including current, standard textbooks clearly indicates that comparatively little has been written concerning ocular disorders of psychogenic origin. The majority of publications in this field deal with the conversion syndrome of hysterical blindness and its spectacular manifestations of motivated disregard of visual impressions, tubular fields and corneal anesthesia. Apparently very few efforts have been made by ophthalmologists to attempt an integration of commonly observed ocular complaints and symptoms into the fabric of such psychoneurotic states as psychasthenia, neurasthenia, reactive depression, hypochondriasis, and anxiety-tension reactions.

This deficiency in ophthalmic literature is quite striking in contrast to the numerous, well-known, and important contributions which have been made by cardiologists and gastro-enterologists, for example, to a better understanding of the somatic manifestations of functional disorders.

It might be of interest to consider some of the reasons why there exist so few articles dealing with the relation-

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ship between psychoneurotic states and the visual apparatus. It cannot be attributed to lack of experience, for ocular complaints, unmistakably of functional genesis, are encountered almost daily in ophthalmic practice. Nor can it reasonably be ascribed to insularity on the part of ophthalmologists, for routine examination of the fundus oculi frequently leads to a diagnosis of systemic disease such as diabetes, arteriosclerosis, hypertension, nephritis, brain tumor, multiple sclerosis, blood dyscrasia and other maladies of a constitutional nature too numerous to mention.

It is, of course, true that the majority of ophthalmologists are relatively unskilled in the art of psychiatric history-taking and interrogation. It is perhaps equally true that quite generally ophthalmic histories leave something to be desired insofar as completeness is concerned. Rarely, for example, is the question of the family history accorded adequate treatment in the questioning of ophthalmic patients. Yet in a history of blindness in a parent or sibling may be found the underlying cause of a profound disturbance of the personality.

In the training of ophthalmologists much stress is necessarily placed upon the acquisition of facility in the use of diagnostic instruments of precision and accuracy. The ophthalmologist therefore tends to place great emphasis upon findings and data acquired through purely objective diagnostic procedures. As a consequence he is often inclined to think in terms of organic disease entities and to arrive at a diagnosis of a functional disorder only secondarily and by exclusion rather than by a dynamic approach to the problem. It is also a fair presumption that the doctor-patient relationship of the ophthalmologist frequently differs to a considerable degree as compared with that enjoyed by the family physician or internist. There is still another aspect of ophthalmic practice which is inimical to a realistic evaluation of the psychoneuroses, and borderline psychoneurotic states. The great majority of patients who consult an oculist anticipate that a very tangible and concrete explanation of their symptoms together with a definite solution of their particular problem will be accorded them at the conclusion of the eye examination. It seems conceivable that this aspect of the practice of diseases of the eye may have conditioned the attitude of many ophthalmologists, particularly those who each day perform a large number of refractions, with respect to the final disposition of patients whose symptoms are antithetical to the clinical findings. It is simply much easier to change a pair of glasses than a way of life.

Under ideal conditions of medical practice it would obviously be desirable to obtain a psychiatric consultation upon all patients who exhibit psychoneurotic traits. So great is the misunderstanding of many patients, however, even in this era of widespread dissemination of medical knowledge in the public press, that unless it is managed with considerable skill and tact, the suggestion that a psychiatric consultation is in order may evoke a reaction of considerable resentment on the part of the patient. It is sometimes quite necessary to resort to an elaborate build-up and even fanciful explanation of need for psychiatric consultation before certain categories of patients can be persuaded to avail themselves of the advantages of management by our psychiatric colleagues.

The large number of patients whose illness is partly or wholly of a functional nature, however, precludes the possibility of referring all such individuals to the rather small number of available psychiatrists and internists who are skilled in the handling of psychosomatic disorders. Many of the borderline and milder psychoneurotics can and should be treated at first hand, reserving the more difficult problems for the psychiatrist.

In recent years, partly as the result of more intensive psychiatric instruction at the undergraduate level and partly as a consequence of a more compelling interest in psychosomatic disorders stemming from the experiences of World War II, the management of psychosomatic disorders by the medical profession at large has improved appreciably in recent years. It must be acknowledged that the armed forces accomplished a great deal in ameliorating the attitude of many physicians with respect to mental disorders of all types, particularly the psychoneuroses. Credit is also due the policymakers of our medical schools for the powerful influence they have exerted in emphasizing the importance of psychologic medicine.

In the military service during World War II an unprecedented opportunity of acquiring a vast amount of data concerning the incidence of the various types of ocular psychoneurosis unfortunately was lost through lack of a centrally directed program of clinical research. Since nearly 40 per cent of all medical discharges from the Army were due to psychiatric states, principally psychoneurosis, it can readily be appreciated that there was no dearth of material. In all the larger medical installations, competent psychiatric examiners were available as consultants. Furthermore, any difficulty in persuading the patient to accept psychiatric attention could be expeditiously resolved. While it is to be regretted that no formal study of the incidence of the ocular psychoneuroses was ever undertaken, certain impressions come readily to mind. At one of the large Army eye centers, O'Reilly General Hospital, located in Springfield, Missouri, neuro-psychiatric consultations were requested upon a very large number of eye patients. Very few instances of ocular hysteria were encountered. Malingering, which is, of course, a psychopathic trait and therefore does not fall within the purview of this discussion, was also uncommon. The great majority of patients referred to the psychiatrist were found to be suffering from anxiety reactions of varying profundity, although not infrequently an admixture of other psychoneurotic states, particularly neurasthenia, and hypochondriasis was also present. Obsessive-compulsive states and reactive depressions were seldom encountered in patients assigned to the eye service.

While no precise figures are available in existing ophthalmic literature, impressions gained from private practice indicate that of the various psychoneuroses, anxiety reactions are more common in the field of ophthalmology than other varieties. They may be sufficiently severe to constitute a major problem in their clinical management. It is the purpose of this thesis to examine and discuss anxiety-reactions having an ocular basis, to speculate upon their pathogenesis, to enumerate

some of the more commonly encountered ocular symptoms, and to elaborate upon measures which are regarded as of value in their treatment.

An anxiety state should be looked upon as one which occurs in a patient who is otherwise mentally normal, and which is either directed toward some object or situation which under ordinary circumstances does not evoke such a reaction, or else one which is experienced as an undirected emotional state, the cause of which the patient is unable to comprehend. Psychiatric research has demonstrated that an apparently misdirected or undirected anxiety reaction almost invariably arises in circumstances for which an intelligible explanation can be found. In some instances a total psychobiological survey of the patient may be required, including a longitudinal life history and even psychoanalytical studies.

Anxiety of psychopathologic proportions can arise from conditioned stimuli. The well-known experiments of Pavlov have conclusively established such a possibility. Many of the phobias, for example, owe their origin to conditioned stimuli. The environment or setting in which the initial symptoms occur, while not of necessity their origin, may serve as a conditioned stimulus. Such a stimulus is quite capable through the mechanism of association, of exciting the emotion of anxiety although the patient himself may have forgotten the original cause.

Anxiety states may also be induced by suggestion and even directed toward a situation which ordinarly should occasion no cause for alarm. Fears, acquired in early childhood, have frequently persisted into adult life as the result of injudicious and ill-advised remarks or suggestions from parents, nurses, teachers and playmates.

Anxiety states may also arise in a dissociated form where the anxiety is so completely dissociated from its original source that the source is no longer recognized as its cause. Such dissociation of the emotion from its cause is explained by the psychological phenomenon of repression. According to the Freudian School, many, if not the majority of anxiety neuroses, are attributable to a repressed infantile attachment to the parent of the opposite sex.

In addition to the three aforementioned types of anxiety, psychiatrists recognize a fourth type which they term constitutional anxiety. In some individuals anxiety constitutes the customary or habitual reaction to a large part of their environment. It has been said of such persons that it is not the threat which is serious, but the self which is vulnerable. This form of anxiety becomes established very early in life and is often the outcome of a deeply-rooted sense of inferiority. It is considered to be the product of situations which obtain in family life during childhood and early adolescence. Competition between children for the affection of their parents may lead to anxiety neurosis, or it may develop through association with emotionally unstable, tyrannical or alcoholic parents. The psychologic patterns thus established in early life become perpetuated in the reactions of later years. Since anxiety reactions, involving the eye, almost invariably are characterized by mental and physical manifestations as well, it seems desirable to mention some of the more important signs and symptoms which enable the clinician to arrive at a diagnosis.

The outstanding symptom, of course, is anxiety. Such apprehensiveness may be either quite constant and diffuse or it may occur in paroxysmal intensifications resulting in a state of utter panic. Irritability, insomnia, vertigo, inability to concentrate, vague feelings of depression and nightmares are other commonly encountered symptoms. Occasionally patients complain of a sensation of pressure at the vertex or a sensation of falling through space. Anorexia is not at all uncommon. Tachycardia, diarrhea, frequency of micturition, and profuse sweating may occur and point to over-activity of the sympathetic nervous system.

Upon physical examination the blood pressure is usually subnormal, the pulse rapid, the extremities cold and clammy; the pupils are often dilated but there is no disturbance of their reaction to light or accommodation. Exaggerated tendon reflexes may be elicited. Anxiety neurosis must be distinguished from vaso-vagal attacks, angina pectoris, organic brain disease, particularly senile changes due to arteriosclerosis, agitated depression and in some instances schizophrenia, especially in its early stages. Of the other psychoneuroses it is more often confused with neurasthenia with which it has certain subjective symptoms in common.

The eye, since it contains within itself nearly all of the functional components upon which personal maladjustment and emotional events are capable of being reflected, readily lends itself to the production of symptom-complexes occasioned by psychological stresses and strains. In illustration and support of this viewpoint it is only necessary to recall that not only the reception of sensory impressions, but also the voluntary contraction of striated muscles and the involuntary contraction of unstriped muscle all may and do occur in the visual apparatus. One may therefore expect to encounter a wide range of ocular symptoms which are predicated upon disturbances of the psyche.

Among the essentially ocular complaints which characterize the patient suffering from anxiety neurosis, fear of blindness, fear of some specific eye disease, and fear of inability to use the eyes without incurring serious impairment of vision are the most striking. This is particularly true of patients who have lost the vision of one eye, in patients with early cataract, glaucoma, and macular disease, and is also encountered in patients suffering from amblyopia exanopsia. Pain, in and about the eyes, sometimes vaguely described and of a diffuse nature but occasionally definitely localized back of the eyes, and of great intensity, are also suggestive symptoms. Headache, occuring in anxiety neurosis, is frequently represented by the patient as an intolerable sense of pressure and is often localized at the vertex or some equally definite anatomic location. Inability to read or perform any type of close work except for a very brief time is a common symptom. Upon careful questioning the fact will usually be elicited, however, that such incapacity is due to a lack of concentration, a preoccupation of the patient with his fears, rather than the nervous asthenopia which is so prominent a feature of the neurasthenic personality.

Photophobia, unaccompanied by demonstrable signs of either external or intraocular inflammatory disease, constitutes an occasional ocular symptom in anxiety neurosis. The patient often presents himself wearing deeply tinted lenses. Examination of the eyes can sometimes be carried out with only the greatest difficulty because of the patient's aversion to exposure of the eyes to the ophthalmoscope or slit lamp beam. Even after instillation of local anesthetics the patient may resist efforts to proceed with the examination.

Frequent inctitation or blinking, while commonly noted in hysteria, is also seen in patients suffering from anxiety-tension states. It should not be confused with the essential blepharospasm of hysteria or senile blepharospasm. In the former condition other indices of hysteria are present while the latter condition occurs in individuals of advanced years and anxiety is not a prominent feature of the symptomatology.

Indecisiveness during the subjective examination for glasses is another characteristic of anxiety reactions, especially if marked. While a certain amount of hesitancy in responses as to whether a certain lens improves or fogs the vision is a common occurrence, the psychoneurotic patient with an anxiety reaction nearly always displays unusually great indecision and frequently volunteers the remark that he is afraid that faulty judgment on his part will result in receiving lenses that will be harmful to his eyes. This tendency is so evident in extreme instances that recourse to entirely objective examinations becomes desirable.

In dealing with psychoneurotic patients of any category, it becomes vital to achieve a proper assessment of emotional factors. The frank attitude that either the illness is mental or physical will inevitably lead to pitfalls. The establishment of good rapport between doctor and patient is of unusual importance. Failure to achieve such a rapport leads to a conviction on the part of the patient that the physician is either uninterested or insincere. It has been said of failure to establish a sound relationship, that while the patient may not know the cause of his difficulty he knows how he feels while the doctor knows the cause of the difficulty but does not know how the patient feels. An adequate history is obviously of extreme importance and for the ophthalmologist who is called upon to deal with anxiety states the family history with respect to the incidence of heredofamilial ocular disease should not be overlooked. Repeated examinations and oversolicitude on the part of the examiner should be sedulously avoided. Also superficial and hasty examinations and an attitude that the patient's illness is either of a mysterious or illusory character.

The eye examination must be sufficiently comprehensive and thorough, not only to exclude organic disease but also to impress the patient with the fact that the ophthalmologist is seriously interested in his complaints. Ill-advised haste and superficiality will only serve to arouse the thought that very possibly the true cause of the illness has been overlooked. An unsympathetic attitude will drive the patient to either a more understanding oculist or into the hands of some cultist or irregular practitioner.

It is, of course, quite possible to overlook organic disease of the eye and ascribe the patient's symptoms to a functional etiology. There are several eye diseases which may be misdiagnosed through errors of omission or lack of awareness on the part of the ophthalmologist. One of the most common is imbalance of the extraocular muscles, particularly vertical imbalances. The possibility of such imbalances should be borne in mind in patients with high degrees of anisometropia where a prismatic effect is produced by the lenses. Early glaucoma requires extremely meticulous care in examination, especially of the central field of vision, as recently emphasized by Hendrie Grant. The value of provocative tests should not be underestimated as a means of detecting very early glaucoma. Recurrent erosion of the cornea, causing severe and sharp pain, especially at night, is occasionally discounted as of no consequence and attributed to a psychoneurosis. Other corneal lesions such as superficial punctate keratitis and Sjogren's syndrome, or keratitis sicca, may fail to be recognized through failure to make an examination under the slit lamp. This last-named disease occurs most frequently in women about the time of the menopause and may be accompanied by arthritis and xerostomia. There is a deficiency of tears and examination of the cornea will usually reveal loose filaments of corneal epithelium. A foreign body sensation and photophobia are the usual complaints. The severity of the patient's complaints may seem at considerable variance with the findings uncovered at a single examination unless a Schirmer test to measure the rate of flow of tears is carried out.

Doubtless there are other rather uncommon eye diseases of obscure etiology which may escape detection and cause patients labeled as psychoneurotics to wander from physician to physician seeking relief. This brings to mind one of the bete noirs of the ophthalmologist. Reference is made to the patient who has wandered from refractionist to refractionist, seeking a pair of comfortable spectacles. Usually such individuals have a dozen or more pair of glasses, all approximately of the same strength, and usually indicating the presence of only a low-grade refractive error. They almost invariably have a plethora of eye symptoms which they apparently take great pleasure in reciting with infinite circumstantiality. Often the complaints have been written down and not infrequently they are couched in medical phraseology. They will readily admit to a host of symptoms inplicating other systems of the body. Some of them practically defy the oculist to provide them with a comfortable prescription for lenses. Prompt psychiatric care is invariably indicated for such hypochondriacal individuals.

The treatment of anxiety neurosis should be prompt and always directed primarily toward the goal of discovering the cause for the patient's anxiety. It is sometimes possible for the ophthalmologist, if he has established good rapport, to uncover significant psychiatric data. Judicous questioning concerning the patient's attitude toward health, employment, marital, educational, religious and family problems and difficulties may bring to light situations and conflicts which have an important bearing upon the neurosis. If meaningful information is

disclosed, the next step will be to interpret and explain to the patient his symptoms in relationship to the basic causative factors. This explanation should be couched in simple non-technical language. An attempt can then be made to persuade the patient to reorient his emotional reactions toward the cause of his apprehensiveness.

Since a fear of blindness is so commonly the focal point around which ocular psychoneuroses revolve, particularly in patients suffering from early cataract, glaucoma or macular degenerative lesions, great caution must be observed in discussing the findings to avoid aggravation of the neurosis.

In anxiety reactions of short duration, especially if a definite cause is found, the cure may often be effected at the ophthalmological level through a rational interpretation of the patient's symptoms. It is quite feasible by giving the patient insight to induce him to exhibit a healthier attitude toward his illness.

On the other hand if the ophthalmologist recognizes the anxiety reaction as one of considerable duration, if questioning concerning the usual etiological factors fails to elicit significant psychological content, upon which a therapeutic effort can be based, or if he feels himself incompetent to undertake therapy, psychiatric consultation becomes imperative. Placebos, including a prescription for glasses, except as an interim measure of dubious value, should not be resorted to by the ophthlmologist since their efficacy is but transitory and often destroys the faith of the patient.

Chronic anxiety states, particularly those which are founded upon dissociation and repression or have been initiated by conditioned stimuli will ordinarily require psychiatric consultation and management. Psychoanalytical studies or some modification or variant thereof may prove useful in the unmasking of subconscious mental processes.

Since it is well understood, particularly in the military service, that certain psychoneurotic patients derive a definite personal gain or advantage from their illness it is apparent that a cure is sometimes difficult or impossible of achievement, even after a prolonged regimen of individual psychotherapy.

As an integral phase of the intensive reconditioning program of the Army, mass or group psychotherapy was instituted for psychoneurotic patients during World War II. Lectures and group discussions, employing the question- and answer-method were widely used at general and large station hospitals. Group psychotherapeutic techniques appeared to be of definite value for mild and borderline psychoneurotics, but seemed to retard the progress and even aggravate the condition of severe psychoneurotics. Very possibly the lack of motivation, which unquestionably existed to a rather alarming degree at times, accounts for the fact that mass psychotherapy in the Army was not an unqualified success. It has undoubtedly been of value in civilian practice when conducted under the proper auspices and with the judicious selection of patients. Considering the high incidence of psychoneurosis in civilian practice it seems worthy of further trial as an ancillary measure in our efforts to promote better mental health.

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3. Wechsler, Israel, S.: Textbook of Clinical Neurology, 4th ed. Philadelphia: Saunders, 1939.

Discussion

DR. BURCH, in closing: In reply to Dr. Peppard's question. I think that is very true, individuals suffering from ocular psychoneurosis do have specific complaints which indicates that they are suffering from more than just the eye manifestations. One other remark—often oculists are not careful as to what they tell people who have a senile macular degeneration. They tell them nothing can be done. While it is true that they will lose their central field of vision and their ability to read fine print, very frequently the process is so slow that they will retain some useful vision that will help them to get about. They will not become dependent upon others for getting around. I think the same thing applies to other types of organic eye disease—one has to be extremely careful in dealing with this type of patient for fear of initiating a train of events that upsets the patient's emotional stability.

I wish to thank you for the privilege of coming here tonight and presenting this paper.

The meeting was adjourned.

A. E. CARDLE, *Secretary*

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

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apolis. The defendant charged $15 for the series of three lectures which were attended by about forty women, including two policewomen. Mrs. Evans had planned on giving another lecture, the evening following her arrest, for which she intended to charge $5 but was unable to do so. Mrs. Evans stated she came to Minneapolis, June 30, from Lead, South Dakota, and contacted a so-called health food store for the purpose of advertising their products. During her talks Mrs. Evans discussed various ailments, including diabetes, arthritis, neuritis, menstrual disorders and dietary deficiencies. The defendant would then recommend certain vitamins, medicines and health foods.

The defendant stated she was born in Jay County, Indiana, and had less than a high school education. She further stated that she had operated a millinery shop in Storm Lake, Iowa, for ten years prior to taking up health lecture work. Mrs. Evans claims to have been in health lecture work for the past fifteen years and admitted having been arrested in Indianapolis, Indiana, in 1942 on a similar charge. The defendant likewise admitted that she had no license to practice healing in any state. She was accompanied to Minneapolis by her daughter, Wanda.

Reports and Announcements

NORTHERN MINNESOTA MEDICAL ASSOCIATION

The program for the annual meeting of the Northern Minnesota Medical Association, held August 20 and 21, in Duluth, is as follows:

Friday, August 20

"Ectopic Pregnancy, with Report of a Case of Ovarian Pregnancy" by Dr. Wilford J. Deweese, Bemidji.

"Major Points in Reading Electrocardiograms" by Dr. Arthur C. Kerkhof, Minneapolis.

"Recent Advances in Surgery of the Colon" by Dr. B. Marden Black, Rochester.

Noon Luncheon: F. Manley Brist and Dr. A. J. Chesley, speakers.

"Burns" by Dr. N. Logan Leven, Saint Paul.

"Congenital Retrolental Fibroplasia" by Dr. Earl E. Barrett, Duluth.

"Intussusception in Infancy and Childhood" by Dr. Tague C. Chisholm, Minneapolis.

"Medical Diagnosis in General Practice" by Dr. Walter C. Alvarez, Rochester.

Evening Banquet: Remarks by Dr. A. E. Cardle, president, and Dr. E. M. Hammes, president-elect, Minnesota State Medical Association. Principal address by the Honorable Joseph H. Ball, Senator from Minnesota.

Saturday, August 21

"Clinical-Roentgen-Pathological Conference" planned and arranged by Dr. Henry G. Moehring and Dr. E. L. Tuohy, Duluth.

SOUTHERN MINNESOTA MEDICAL ASSOCIATION

The annual meeting of the Southern Minnesota Medical Association will be held on September 13 at Winona.

Dr. C. L. Sherman, Luverne, is president of the association, and Dr. W. A. Merritt, Rochester, is secretary. Dr. A. E. Meinert, Winona, is chairman of the local Committee on Arrangements. The following scientific program is planned:

Morning

"Three Cases of Scurvy" by Dr. Charles W. Rogers, Winona.

"Common Eye, Ear, Nose and Throat Conditions" (in Kodachrome transparencies) by Dr. George L. Loomis, Winona.

"Treatment of the Duodenal Ulcer" by Dr. James C. Cain, Rochester.

"Complications of Injuries to Blood Vessels" by Dr. James M. Janes, Rochester.

"Carcinoma of the Cervix: Treatment and Aftercare" by Dr. Hilmar R. Schmidt, Winona.

"Colles' Fractures and Their Treatment in General Practice" by Dr. Roger G. Hassett, Mankato.

"A New and Satisfactory Operation for Procidentia" by Dr. Arthur E. Benjamin, Minneapolis.

Afternoon

Case Reports:

"Perirectal Abscess Producing Symptoms of Generalized Peritonitis" by Dr. W. C. Bernstein, Saint Paul.

"Adrenal Cortex Tumor with Masculinization" by Dr. F. E. B. Foley, Saint Paul.

"Unusual Abdominal Injury" by Dr. W. E. Wilson, Northfield.

"Management of Acute Renal Failure" by Dr. Howard M. Odel, Rochester.

"Surgical Treatment of Prostatic Obstruction" by Dr. F. E. B. Foley, Saint Paul.

"Glomus Tumors" by Dr. J. Grafton Love, Rochester.

"Eye Problems in Infancy and Childhood" by Dr. V. L. Lindberg, Minneapolis.

SOUTH DAKOTA CANCER SYMPOSIUM

The South Dakota Division of the American Cancer Society, in co-operation with the South Dakota State Board of Health, is presenting a cancer symposium at the Coliseum, Sioux Falls, South Dakota, on October 11, 12 and 13. Physicians and dentists of Minnesota, Iowa, Nebraska and South Dakota are invited to attend. There is no registration fee. The following program is scheduled:

Tentative Program

October 11, 1948—Morning

9:00 A.M.

Dr. Brewster S. Miller, New York City. Assistant Medical Director, American Cancer Society.
"The American Cancer Society."
Dr. Robert L. Cherry, Kansas City, Missouri. Senior Surgeon, U. S. Public Health Service.
"Role of the Public Health Service in Cancer Control."
Dr. Cornelius P. Rhoads, New York City, Memorial Hospital.
"Present Status of Cancer Research."
Dr. John R. McDonald, Rochester, Minnesota. Pathologist, Mayo Clinic.
"Status of the Papanicolaou Stain for the Diagnosis of Cancer."
Dr. Elbert DeCoursey, Ft. Sam Houston, Texas. Colonel M.C., Chief, Laboratory Service.
"Pathological Diagnosis of Cancer."

Afternoon

2:00 P.M.

Dr. John R. McDonald, Rochester, Minnesota. Pathologist, Mayo Clinic.
"Pathology of Tumors of the Head and Neck."
Dr. Douglas Quick, New York City. Surgeon.
"Diagnosis and Treatment of Tumors of the Mouth, Accessory Sinuses and Salivary Glands."
Dr. Max Cutler, Chicago, Illinois, Oncologist—Chicago Tumor Institute.
"Radiological Treatment of Neoplasms of Head, Neck and Larynx."
Dr. Ferdinand C. Helwig, Kansas City, Missouri. Pathologist. St. Lukes Hospital.
"Special Pathology of Thyroid Tumors."
Dr. Arnold S. Jackson, Madison, Wisconsin. Surgeon—Jackson Clinic.
"Treatment of Thyroid Tumors."

Evening—Open To Laity

8:00 P.M.

Dr. Cornelius P. Rhoads, New York City.
"Future Outlook of Cancer."
Dr. Douglas Quick, New York City.
"Early Diagnosis of Cancer of Head and Neck."
Dr. Elbert DeCoursey, Ft. Sam Houston, Texas.
"The Destructive Effects of Radiation. The Modern Treatment of Cancer."

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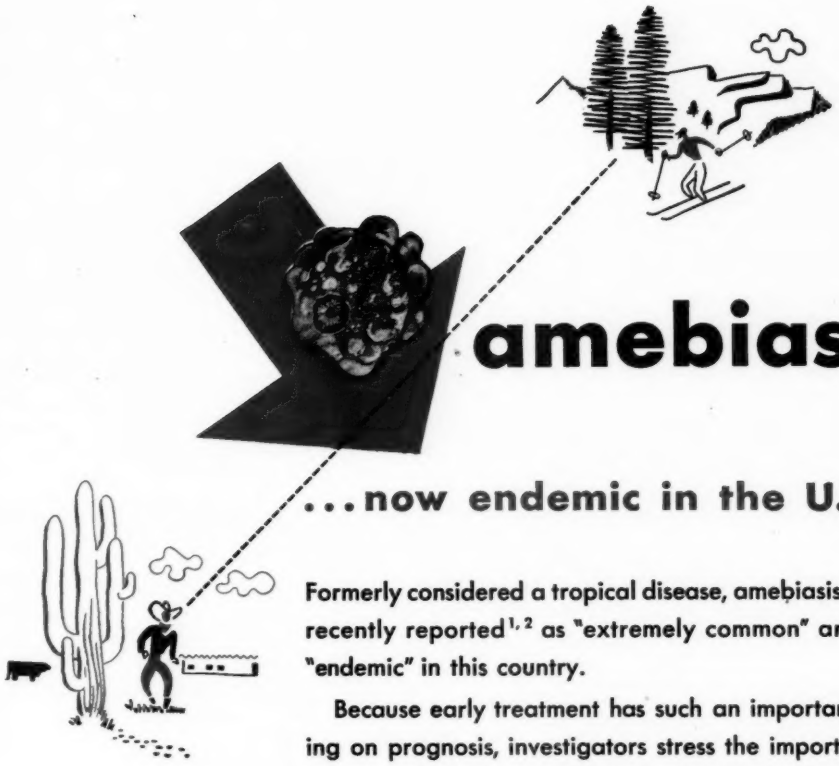

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RESEARCH
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3. Manson-Bahr, P.: Some Tropical Diseases in General Practice: "A Post-War Legacy." Glasgow M. J. 27:123 (May) 1946.

SOUTH DAKOTA CANCER SYMPOSIUM

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October 12, 1948—Morning

9:00 A.M.

Dr. John V. Goode, Dallas, Texas. Professor Surgery, Southwestern University Medical School.
"Diagnosis and Treatment of Neoplasms of the Skin and Fascia, Including Hands and Feet."
Dr. Charles L. Martin, Dallas, Texas. Radiologist, Martin X-Ray and Radium Clinic.
"Radiological Treatment of Neoplasms of Skin."
Dr. Murray M. Copeland, Washington, D. C. Professor of Oncology, Georgetown University Medical Center.
"Benign Tumors of the Breast."
Dr. William Crawford White, New York City. Surgeon Roosevelt Hospital.
"Malignacies of the Breast."
Dr. Max Cutler, Chicago, Illinois. Oncologist, Chicago Tumor Institute.
"Radiological Treatment of Malignancies of the Breast."
Dr. Edwin Bayrd, Rochester, Minnesota. Department Medicine, Mayo Clinic.
"Lymphomas."

Afternoon

2:00 P.M.

Dr. Charles G. Johnston, Detroit, Michigan. Professor Surgery, Wayne University Medical School.
"Pre- and Post-operative Care of the Patient with Malignancy."
Dr. Ferdinand C. Helwig, Kansas City, Missouri.
"Pathology of Pulmonary and Mediastinal Tumors."
Dr. Thomas J. Kinsella, Minneapolis, Minnesota. Surgeon.
"Treatment of Pulmonary and Mediastinal Tumors."
Dr. Robert E. Fricke, Rochester, Minnesota. Radiologist, Mayo Clinic.
"Radiological Treatment of Chest Tumors."
Dr. Ernest Sachs, St. Louis, Missouri. Neuro-Surgeon, Barnes Hospital, Washington University Medical School.
"Neoplasms of Cranial Nerves, Spinal Cord and Peripheral Nerves."

Evening—Open To Laity

8:00 P.M.

Dr. William Crawford White, New York City.
"Tumors of the Breast."
Dr. Brewster S. Miller, New York City.
"The American Cancer Society and the Laity."

October 13, 1948—Morning

9:00 A.M.

Dr. Murray M. Copeland, Washington, D. C.
"Pathology of Bone Tumors."
Dr. Henry C. Marble, Boston, Massachusetts. Surgeon, Massachusetts General Hospital.
"Diagnosis and Treatment of Bone Tumors."
Dr. Charles L. Martin, Dallas, Texas. Radiologist, Martin X-Ray and Radium Clinic.
"Radiological Treatment of Bone Tumors."
Dr. Joe V. Meigs, Boston, Massachusetts Gynecologist, Vincent Memorial Hospital.
"Surgical Treatment for Cancer of the Cervix and Fundus Uteri."
Dr. Robert E. Fricke, Rochester, Minnesota. Radiologist, Mayo Clinic.
"Radiological Treatment of Carcinoma of the Cervix and Fundus Uteri."

Afternoon

2:00 P.M.

Dr. C. D. Creevy, Minneapolis, Minnesota. Professor Urology, Minnesota University Medical School.
"Diagnosis and Treatment of Malignancies of the Bladder and Prostate, Kidneys and Testicles."
Dr. Robert E. Fricke, Rochester, Minnesota. Radiologist, Mayo Clinic.
"Radiological Treatment of Malignancies of the Bladder, Prostate, Kidneys and Testicles."
Dr. Karl A. Meyer, Chicago, Illinois. Surgeon, Cook County Hospital.
"Carcinoma of the Upper Gastrointestinal Tract."
Dr. Raymond W. McNealy, Chicago. Chief Surgeon, Wesley Memorial Hospital.
"Carcinoma of the Colon and Rectum."

AMERICAN CANCER SOCIETY PUBLICATIONS

The American Cancer Society announces production of a series of illustrated monographs designed for wide distribution to general practitioners on the early recognition of cancer. These will be in brochure form profusely illustrated in color, and will be written by physicians of highest competence in their specialties.

The American Cancer Society plans to distribute these as widely as possible to physicians of our country in order to bring to mind again value of recognition of cancer by the general practitioner and his responsibility in correct diagnosis and early treatment.

These will be distributed to physicians by the American Cancer Society on a complimentary basis. The Minnesota Division of the American Cancer Society is now preparing a mailing list to receive these brochures. Any physician and surgeon in Minnesota can obtain these brochures as they are produced by writing to: Minnesota Division, American Cancer Society, Inc., 622 Commerce Bldg., St. Paul 1, Minnesota.

The American Cancer Society is publishing abstracts of current literature on cancer, prepared by the abstract section of the new journal, *Cancer*. The abstracts appear in volumes entitled "Cancer Current Literature." The first number in Volume 1 appeared in January, 1948. The publication attempts to present a listing and/or abstracts of all published research and clinical observations on cancer which have appeared throughout the world. Physicians may obtain copies upon application to the American Cancer Society, 47 Beaver Street, New York 4, N. Y.

MISSISSIPPI VALLEY MEDICAL SOCIETY

The thirteenth annual meeting of the Mississippi Valley Medical Society at Springfield, Illinois, September 29, 30 and October 1, will feature three full days of lectures and exhibits by members of the faculty of a large group of the leading medical schools and hospitals of this country. The medical schools represented include, Washington University, St. Louis University, University of Chicago, University of Minnesota, Northwestern University, University of Illinois, State University of Iowa, Baylor University and Loyola University. The entire scientific program and forty technical and scientific exhibits have been planned to appeal to the physician in general practice.

No registration fee will be charged, and every ethical physician is cordially invited to attend. The entire meeting will be held in the Abraham Lincoln Hotel. A detailed program may be obtained from the Secretary, Harold Swanberg, M.D., 209-224 W.C.U. Bldg., Quincy, Iillinois.

MISSISSIPPI VALLEY MEDICAL EDITORS' ASSOCIATION

The fifth annual meeting, Mississippi Valley Medical Editors' Association, will be held at the Hotel Abraham Lincoln, Springfield, Illinois, September 29. This will probably be the last meeting under the above title, as the Association's purpose will be enlarged and its constitution revised at Springfield. President Vincent T. Williams, of Kansas City, Mo., Editor, *Jackson County Medical Society Weekly Bulletin*, will preside. In the afternoon, Dr. Morris Fishbein, Editor, *Journal American Medical Association*, will give a course in medical writing. There will be a fellowship hour, dinner and speakers in the

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In Memoriam

FRANK J. ANDERSON

Dr. Frank J. Anderson, of Minneapolis, died June 25, 1948, at the age of fifty-eight.

Dr. Anderson was born at Ellsworth, Wisconsin, March 29, 1890. He received his medical degree at the University of Minnesota in 1917 and interned at the Minneapolis General Hospital. Postgraduate work in x-ray diagnosis was taken in Chicago and Washington. He served in World War I, from 1917 to 1920, when he began practice in Minneapolis. He had been in charge of the X-Ray Department at Deaconess Hospital, Minneapolis, since 1921.

He was a member of Hennepin County Medical Society, the Minnesota State and American Medical Associations. He also served in World War II and was a member of the Navy-Marine post of the American Legion and the Halverson Bowers post of Veterans of Foreign Wars.

Dr. Anderson is survived by his widow, two sons, Dr. Frank J. Anderson, Jr., and Robert L. Anderson, and two brothers, Alfred and Oscar W. Anderson, all of Minneapolis.

LUTHARD N. BERGH

Dr. L. N. Bergh, a practitioner at Montevideo, Minnesota, for about forty years, died suddenly of a heart attack on June 2, 1948.

Dr. Bergh was born in Yellow Medicine County, Minnesota, on September 27, 1880. He acquired a B.A. degree from Augsburg College, Minneapolis, in 1902, and an M.D. degree from the University of Minnesota in 1906. He interned at the Ancker Hospital, Saint Paul.

He was Division Surgeon for the Chicago, Milwaukee and Saint Paul Railway, a member of the Camp Release County Society, the Minnesota State and American Medical Associations, and was prominent in the affairs of his community.

Dr. Bergh is survived by his widow, a son, Dr. George Bergh, and a daughter, Dr. Solveig Bergh, and two grandchildren, all of Minneapolis.

DANIEL BENJAMIN MARK

Dr. D. B. Mark, son of the late Dr. Joseph Mark, a pioneer Minneapolis physician, died on July 4, 1948, after practicing in Minneapolis for thirty-four years.

Born in Saint Paul, July 16, 1886, Dr. Mark received his medical degree from Barnes Medical College, Saint Louis, Missouri, *summa cum laude*, in 1909. He interned at Asbury Hospital, Minneapolis, and took postgraduate work at the University of Minnesota in 1912.

He was a member of the Hennepin County Medical Society, the Minnesota State and American Medical Associations, the American Academy of General Practice, the American College of Physicians and Surgeons, and a Fellow of the International College of Surgeons. He was a staff member of Asbury and Eitel Hospitals. He was also a Mason, a charter member of the Standard Club and a board member of Adath Jeshurun Cemetery Association.

Dr. Mark is survived by his wife, a son, Dr. Vernon Hershel Mark of Minneapolis, and a sister, Mrs. Henry Crain of Mobile, Alabama.

ARTHUR E. NICHOLS

Dr. Arthur E. Nichols, for many years a practitioner in Saint Paul, passed away March 20, 1948, at the age of eighty-three. He had been Deputy Health Commissioner from 1921 until his death. Dr. Nichols was born in Salem Township, Olmsted County, Minnesota, on December 15, 1864. Preliminary education was obtained at Fergus Falls.

After having been Assistant Postmaster in Fergus Falls for a number of years, he moved to Winnipeg, where he attended Manitoba Medical College for three years. He then went to Chicago, where he graduated from Bennett Medical College in 1900. Internship was served at Cook County Hospital in Chicago.

In 1901 Dr. Nichols came to Saint Paul, where he has practiced since, serving as Deputy Coroner for one year, Director of Hygiene in the public schools for a year, Medical Inspector in the Health Department for two years, and Deputy Health Commissioner from 1921 to the time of his death.

He was a member of the Ramsey County Medical Society, the Minnesota State and American Medical Associations; he was a member of the Masonic Order and a communicant of Saint Clements Episcopal Church.

Dr. Nichols was married January 9, 1901, to Emily Wagner. He is survived by his widow and seven children, John T. Nichols of Baltimore, George Nichols of Los Angeles, Mrs. James Lee Ryan of Springfield, Missouri, Mrs. Conrad Nordquist of Minneapolis, Mrs. John D. Vars, Mrs. E. G. Nattrass and Janet Nichols, all of Saint Paul.

Dr. Nichols was unassuming and retiring by nature, but he maintained the respect and affections of his many lay and professional friends.

EUBERT V. SIMONS

Dr. Eubert V. Simons of Spring Valley, Minnesota, died May 28, 1948, at the age of seventy-four.

Dr. Simons was born April 26, 1874, in Sparta, Michigan. He was a graduate of the Medical and Surgical school of Keokuk, Iowa. Following his graduation in 1903, he practiced in Etna until 1914, when he moved to Spring Valley. With Dr. Cyrus Eby, he operated a hospital in Spring Valley from 1916 to 1925.

He was a member of the Olmsted-Houston-Fillmore-Dodge County Medical Society, the Minnesota State and American Medical Associations.

Dr. Simons is survived by his widow, the former Neva Postle, and one son, Captain Lyle Simons of Fort Sheridan, Illinois. A second son, Fred, died in 1921.

Of General Interest

It was announced in June that Dr. William Reid had sold his residential property in Deerwood and at the time was living with his son in Grand Rapids.

* * *

The marriage of Dr. David Turner Carr, Rochester, to Miss Rosemary Rudow, Jackson, was announced early in July.

* * *

After a year of postgraduate work in medicine and surgery at the University of Minnesota, Dr. C. L. Roholt resumed his practice in Waverly on July 1.

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Dr. Roy N. Andrews, Mankato, was one of the Minnesota physicians who attended a meeting of the American Academy of Pediatrics in Milwaukee late in June.

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Dr. Joseph W. Goldsmith has opened offices at 223 Lowry Medical Arts Building, Saint Paul, for the practice of obstetrics and gynecology.

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Dr. Raphael J. Weisberg announces that he has opened offices at 620 Medical Arts Building, Minneapolis, for the practice of internal medicine.

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A paper entitled "Basic and General Principles in the Recognition and Treatment of Fractures" was presented by Dr. Vernon L. Hart, Minneapolis, at the annual meeting of the Upper Peninsula Michigan Medical Society on June 27.

* * *

Dr. C. H. Scheifley, Rochester, spoke at a meeting of the Syphilis Study Section of the Cardiovascular Study Section of the National Institute of Health in Baltimore, Maryland, on June 25.

* * *

At a meeting of the American Academy of Pediatrics in Milwaukee, Wisconsin, on June 28, Dr. Benjamin Spock, Rochester, spoke on "Discipline, Spoiling and Self-Regulation."

* * *

At a meeting of the Rochester Kiwanis Club on June 17, Dr. Viktor Wilson, Rochester city health officer, discussed plans and financing of a proposed community health center.

* * *

After two years of association with the St. Cloud Clinic, Dr. Sidney Stenerodden began a three-year fellowship in otolaryngology at the University of Minnesota on July 1.

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Dr. Donald Anderson, formerly of Lamberton, has become associated in practice with Dr. O. J. Seifert of

● *See Page 924 for Resume of Symposium*

New Ulm. Dr. Anderson is maintaining office hours in Lamberton on Saturday afternoons and several evenings each week.

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Announcement was made early in June that Dr. Wesley Spink, professor of medicine at the University of Minnesota, had been appointed to the board of governors of the American College of Physicians.

* * *

A free tuberculosis-examination clinic was held in South Saint Paul on July 8 under the supervision of Dr. Karl Pfuetze, superintendent of Mineral Springs Sanatorium.

* * *

In June, Dr. W. H. Sutherland, Benson, became the president of the Swift County Public Health Association, replacing Dr. C. L. Scofield who had resigned because of ill health.

* * *

Dr. M. M. Hargraves, Rochester, is one of twenty-eight Minnesota residents listed by the Minnesota Historical Society as available as speakers at centennial celebrations in Minnesota next year.

* * *

Dr. Henry E. Michelson, Minneapolis, has been invited to be a guest speaker at a meeting of the Michigan State Medical Society in Detroit on September 22. He also has been invited to address the Indiana State Medical Association at a meeting in Indianapolis on October 25.

After completing his military service on June 16, Dr. R. F. Deranleau became associated in practice with Dr. Paul N. Larson and Dr. William B. Stromme in the Medical Arts Building, Minneapolis.

* * *

It was announced early in June that Dr. Harold Henry, brother of Dr. C. J. Henry and Dr. J. E. Henry of Milaca, was planning to locate in Hinckley to replace Dr. C. G. Kelsey who intended to retire in July.

* * *

During the middle of June, Dr. J. C. Klein, Shakopee, flew to Chicago to attend the annual meeting of the American Geriatrics Association which was held for three days in that city.

* * *

Dr. Robert N. Barr has succeeded Dr. Viktor O. Wilson as chief of the section of special services of the Minnesota Department of Health. Dr. Barr was formerly chief of the section of departmental administration. Dr. Wilson is now city health officer in Rochester.

* * *

Dr. M. C. Petersen, superintendent of the Rochester State Hospital, flew to Europe in June to visit relatives in Denmark, his birthplace, and to inspect mental hospitals in the Scandinavian countries and in Switzerland.

* * *

Dr. S. A. Slater, who has been superintendent of the Southwestern Minnesota Sanatorium in Worthington for the past thirty years, recently was re-elected to the

board of the National Tuberculosis Association for another two-year term. He has been a director of the organization for twenty years.

* * *

Dr. William A. Butcher, formerly of Downey, Illinois, arrived in Stewartville in June to spend six months in association with Dr. A. F. Risser. On January 1, 1949, Dr. Butcher will become affiliated with the Mayo Clinic in Rochester.

* * *

Formerly of Archbold, Ohio, Dr. William L. Lorton has become resident physician at Hibbing General Hospital. He succeeds Dr. Walter W. Kelly, who left to open a practice in California. Dr. Lorton is a graduate of the University of Chicago Medical School.

* * *

The Washington County chest x-ray survey, which began on July 22, will continue through September 30, with headquarters in the armory at Stillwater. In charge of the survey is Dr. Hilbert Mark, tuberculosis division, Minnesota Department of Health.

* * *

Dr. R. A. MacDonald, Littlefork, was married in Duluth on June 15 to Miss Barbara Bramer, formerly a nurse at St. Luke's Hospital, Duluth. Dr. MacDonald is now associated in medical practice with Dr. R. D. Hanover at Littlefork.

* * *

Two former Mayo Foundation fellows were recently advanced to higher academic positions. Dr. Brown M. Dobyns was made assistant professor of surgery at the Harvard Medical School, and Dr. R. D. Harley was appointed associate professor of ophthalmology at Temple University School of Medicine.

* * *

On July 15, Dr. Marcus A. Keil joined the staff of the Mankato Clinic. A graduate of the University of Iowa in 1940, Dr. Keil interned at Miller Hospital, Saint Paul, before entering the army in 1941. Following his army service, he completed a three-year fellowship in internal medicine at the University of Minnesota.

* * *

A former Sanborn resident, Dr. John Yaeger, who was discharged from military service in July, has become the assistant of Dr. R. J. Cairns in Redwood Falls. Dr. Yaeger will be in Redwood Falls during the absence of Dr. James B. Flynn, who is spending a year at the General Hospital in Louisville, Kentucky.

* * *

During June, Dr. Charles G. Sheppard of Hutchinson traded office space with Dr. R. I. Sheppard, dentist, in a Hutchinson office building. Purpose of the trade was to provide more convenient facilities when Dr. Donald Tatum joined Dr. Charles Sheppard on July 1. Both office suites were completely redecorated in the process.

* * *

Candy suckers were used as bribes to promote cooperation as rural St. Louis County youngsters went through the annual health "roundup" during June. Sponsored by the county health department, the "round-

up" provided complete physical examinations and inoculations for the rural children, with the candy persuader helping to expedite the process.

* * *

Dr. J. A. Broberg, Blue Earth, who practiced medicine in Faribault County for fifty years before his retirement in 1942, celebrated his eighty-sixth birthday anniversary on July 5. A graduate of the University of Michigan in 1892, Dr. Broberg began his practice at the age of thirty, living first in Delavan and later in Blue Earth.

* * *

On July 1, Dr. Adrian H. Bodelson became associated in practice with Dr. H. E. Drill in Hopkins (Minneapolis suburb). A graduate of the University of Minnesota Medical School in 1946, Dr. Bodelson interned at St. Mary's Hospital, Duluth, and served for one year as a resident physician in Abbott Hospital, Minneapolis.

* * *

Announcement has been made that Dr. Leo B. Froke has become associated in practice with Dr. F. C. Westerman in Montgomery. A graduate of North Dakota University and the Bowman Gray Medical School in Winston-Salem, N. C., Dr. Froke served his internship at St. Mary's Hospital, Minneapolis, before enlisting in the army in 1942. After four years of active duty, he was assigned to the Veterans Hospital in St. Cloud, where he remained until discharged from service in June.

Dr. E. O. Nimlos, Stephen, left for the West Coast on June 20 to attend the National Red Cross Conference in San Francisco and to enjoy a vacation trip along the Pacific coastline. During his absence his practice was conducted by his son, Dr. Kenneth O. Nimlos, who was discharged from the army about the middle of June.

* * *

The Oliver Clinic in Graceville acquired a new staff physician during the middle of July when Dr. George Louis Barnett arrived from Sioux Fall, South Dakota, to begin his practice in Graceville. A graduate of Creighton University in Omaha, Nebraska, Dr. Barnett served his internship at St. Joseph's Hospital, Omaha.

* * *

Among Minnesota physicians who attended the sixth biennial continuation course in otolaryngology at the University of Minnesota June 28 through July 2, were Dr. R. H. Monahan, International Falls; Dr. John H. Cameron, Crookston; Dr. Joseph L. Arko and Dr. Andrew Sinamark, Hibbing; Dr. Joseph B. Gaida, St. Cloud, and Dr. J. Donald Sjoding, Mankato.

* * *

Announcements of changes in office addresses were recently made by four Minneapolis physicians. Dr. Wilfred J. Bushard is now located at 1750 Medical Arts Building, Dr. Dale H. Correa is at 612 Medical Arts Building, Dr. Roy A. Hoffman is at 2802 E. Forty-

second Street, and Dr. Julien V. Petit is located at 1111 Nicollet Avenue.

* * *

Main speaker at a meeting of the Pipestone County Public Health Nursing Advisory Committee, held in Pipestone on June 14, was Dr. Percy T. Watson, director of the division of local health services of the Minnesota Department of Health.

* * *

The honorary degree of Doctor of Science was conferred upon Dr. Alfred W. Adson, Rochester, at graduation exercises held at St. Olaf College, Northfield, on June 7.

* * *

Dr. H. L. Bair and Dr. C. F. Lake, Rochester, each presented two papers at a meeting of the Wisconsin Eye, Ear, Nose and Throat Society held in Eau Claire July 10 and 11. The titles of Dr. Bair's papers were "Comments on Ocular Surgery" and "Management of Uveitis." Dr. Lake's subjects were "Management of Vasomotor Rhinitis" and "Mucoceles and Pyoceles of the Frontal and Ethmoid Paranasal Sinuses."

* * *

"Let's Talk About Health," the regular health broadcasts of Dr. Donald A. Dukelow over Station KUOM, can be heard each Monday at 11:15 a.m. This new broadcast time became effective August 2. The broadcasts are sponsored by the Community Chest and Council of Hennepin County and by the University of Minnesota. Dr. Dukelow discusses both personal and community health.

* * *

Dr. John P. Dahlstet, formerly of Saint Paul, opened offices for the practice of medicine in North Mankato early in July. He planned to conduct a general practice with some specialization in internal medicine.

A graduate of the University of Nebraska Medical School in 1943, Dr. Dahlstet served an internship and residency at Miller Hospital, Saint Paul. For the past two years he was associated in practice with Dr. J. N. Gehlen, Saint Paul.

* * *

Dr. William T. Peyton, director of the division of neurosurgery in the University of Minnesota Medical School, was a speaker at the International Congress of Psychosurgery in Lisbon, Portugal, on August 6. He spoke on the subject, "Lobectomy in Schizophrenia."

A week earlier, in Paris, Dr. Peyton addressed the staff of the Hospital de la Salpetriere, speaking on "Fluorescein, Di-iodo-fluorescein and Its Isotopes in the Diagnosis of Brain Tumor."

* * *

Roentgen Studies of the Lungs and Heart, a book recently published by the University of Minnesota Press, consists of a series of lectures delivered at the University of Minnesota by Dr. Nils Westermark, associate professor of radiology in the Caroline Institute at the University of Stockholm and director of the department of radiology at St. Goran's Hospital, Stockholm. The pro-

fusely illustrated volume was edited by Dr. Leo G. Rigler, chief of the department of radiology and physical therapy at the University of Minnesota.

* * *

After hoping for twenty years to make the journey, Dr. Swan Ericson and his family left Le Sueur on June 4 for a two-and-one-half-month trip through Sweden. Dr. Ericson came to the United States from Sweden in 1908 at the age of nineteen, unable to speak English. By 1919 he had graduated from the University of Minnesota Medical School. He has practiced at Le Sueur since 1922, hoping to return some day to Sweden to visit his relatives. This summer he achieved that goal.

* * *

Dr. Joseph L. Whelan, Minneapolis, was married on June 12 to Miss Gloria Ann Rewaldt of Gross Pointe Farms, Michigan. The wedding took place in Detroit. A former resident of Chisholm and a graduate of the University of Minnesota Medical School, Dr. Whelan has served for three years in the Army Air Forces and has taken postgraduate work at the University of Pennsylvania Hospital and at Wayne University College of Medicine. At present he is on the resident staff of the University of Minnesota Hospitals and the Veterans Hospital, Minneapolis.

* * *

On July 17, Dr. Wesley W. Spink, professor of medicine at the University of Minnesota, flew to Mexico City to survey the brucellosis problem in Mexico and to help set up a model center for the treatment of human brucellosis by the recently developed streptomycin-sulfadiazine method. Working with Dr. M. Ruiz Castaneda, director of brucellosis control for Mexico's Department of Health, Dr. Spink planned to try the new treatment on 100 of the most difficult cases of brucellosis melitensis available. The project was under the auspices of the National Research Council and the National Institute of Health.

Dr. Spink has been invited to discuss the streptomycin-sulfadiazine treatment, which was developed at the University of Minnesota, at a meeting of Central and South American physicians in Cordoba, Argentina, late in November.

* * *

A medical symposium highlighted the program of the Eighth District Federation of Women's Clubs at a meeting in Buhl on June 29. With the theme, "A Healthier Tomorrow," five physicians presented talks on various phases of medicine. The program, which was arranged by the Minnesota Public Health Association, was as follows:

Dr. Mario Fischer, Duluth, presided and also spoke on "A New Day in Tuberculosis Control." Dr. Earl Barrett, Duluth, presented "Health of the Preschool and School Child," and Dr. Clarence Jacobson, Chisholm, discussed "Contagious Diseases—Then and Now." Dr. Frank Hirschboeck, Duluth, described "New Medical Discoveries," and Dr. E. L. Tuohy, Duluth, spoke on "Geriatrics or Treating of the Aged Population."

HOSPITAL NEWS

Appointment of eight International Falls physicians to the medical staff of the new Falls Memorial Hospital was announced on July 1. Dr. M. E. Withrow, oldest practicing physician in International Falls, was named chief of staff. The other staff members named were Dr. W. F. Cantwell, Dr. C. C. Craig, Dr. D. M. Potek, Dr. F. G. Chermak, Dr. R. H. Monahan, Jr., Dr. E. B. Kinports and Dr. F. H. Walter.

* * *

New superintendent of St. Luke's Hospital, Saint Paul, is Miss Helen Lueck, a University of Minnesota graduate with degrees in nursing education and hospital administration. During the war Miss Lueck served in the South Pacific area for three years as an army nurse with the rank of captain. Her brother, Dr. Wallace Lueck, is a resident physician in pediatrics in Minneapolis General Hospital.

* * *

BLUE SHIELD NEWS

No. persons covered by Blue Shield as of July 15, 1948	30,000
No. Blue Shield cases paid on July 15, 1948.....	272
Total for 1948.....	825
Amount paid on Blue Shield cases on July 15, 1948..	$ 9,687.23
Total for 1948.....	$30,173.39

Recently the Blue Shield office has received many requests from physicians throughout the state for Medical Service Report forms to report cases on *hospitalized patients*. As a result of these requests we would like to explain our reason for not complying.

At the present time a Blue Shield claim is originated in one of the two ways:

1. If the Blue Shield subscriber is hospitalized, the claim is originated from the Blue Cross hospital admission notice.
2. If the Blue Shield subscriber receives Blue Shield services outside of the hospital, the claim is to be originated by the attending physician on a form provided him for that purpose.

Now to go into detail:

When a Blue Shield, Blue Cross subscriber is admitted to a hospital, that hospital sends an admission notice to the Blue Cross office, and a copy of this notice is sent to the Blue Shield office. From this notice the Blue Shield office can start the claim as all the information necessary is on it: the patient's name, name of hospital, physician's name, date of admission, admission diagnosis, etc. This information is transcribed onto a Medical Service Report form that is sent to the attending physician for his completion. This method is used because by the Blue Shield office's completing the form, with the exception of the diagnosis, service and date of discharge from the hospital, the amount of book work on the part of the physician is reduced. Also, this method speeds up the paying of Blue Shield cases for in many instances the hospital report is in before the physician would have a chance to send this office the information.

The case for the Blue Shield subscriber that is treated out of the hospital must be originated by the physi-

cian on a Home and Office Medical Service Report form. This form requires more filling out because only the subscriber and physician have the information this office needs. Please do not complete a Home and Office, Medical Service Report form when the patient is hospitalized, for it will mean that we have probably sent out a form covering that hospitalization, and thus duplicate work is done.

This article is taken in part from the Manual that was sent to all participating Doctors of Medicine. For further details on handling claims the reader is referred to the above-mentioned Manual.

DISTRICT HEALTH OFFICES

The entire state of Minnesota is now supplied with district offices of the State Department of Health. The two newest districts, Numbers 7 and 8, were opened during July. Headquarters for District 7 are at Fergus Falls and for District 8 at Little Falls.

Dr. E. J. Simons of Swanville has been appointed half-time health officer and director for District No. 8. As yet no health officer has been found available for District No. 7. Mr. Frederick F. Heisel, public health engineer, is temporarily in charge of that district.

Following are the directors, counties included, and headquarters for each public health district:

District 1.—Director, Dr. George Miners, Bemidji; counties included: Beltrami, upper Cass, Clearwater, Hubbard, Itasca, Kittson, Koochiching, Lake of the Woods, Mahnomen, Marshall, Pennington, Polk, Red Lake and Roseau; headquarters in Court House, Bemidji.

District 2.—Director, Dr. A. G. Liedloff, Mankato; counties included: Blue Earth, Brown, Carver, Faribault, Le Sueur, Martin, McLeod, Nicollet, Scott, Sibley, Waseca, Watonwan; headquarters, Court House, Mankato.

District 3.—Acting director, Dr. V. O. Wilson, Rochester; counties included: Dodge, Fillmore, Freeborn, Goodhue, Houston, Mower, Olmsted, Rice, Steele, Wabasha, Winona; headquarters, Room 212, City Hall, Rochester.

District 4.—Acting director, Dr. Mario McC. Fischer, Duluth; counties included: Aitkin, Carlton, Cook, Lake, Pine, St. Louis; headquarters, Room 115, Court House, Duluth 2.

District 5.—Acting director, Dr. B. O. Mork, Jr., Worthington; counties included: Chippewa, Cottonwood, Jackson, Lac qui Parle, Lincoln, Lyon, Murray, Nobles, Pipestone, Redwood, Renville, Rock, Yellow Medicine; headquarters, Court House, Worthington.

District 6.—Director, Dr. A. B. Rosenfield, Minneapolis; counties included: Anoka, Chisago, Dakota, rural Hennepin, Isanti, Kanabec, rural Ramsey, Washington, Wright; headquarters, State Board of Health Building, University Campus, Minneapolis 14.

District 7.—Counties included: Becker, Big Stone, Clay, Douglas, Grant, Norman, Otter Tail, Pope, Stevens, Swift, Traverse, Wilkin; headquarters, Court House, Fergus Falls.

District 8.—Acting director: E. J. Simons, Swanville; counties included: Benton, lower Cass, Crow Wing, Kandiyohi, Meeker, Mille Lacs, Morrison, Sherburne, Stearns, Todd, Wadena; headquarters, Court House, Little Falls.

MISSISSIPPI VALLEY MEDICAL EDITORS' ASSOCIATION

(Continued from Page 926)

evening, including Dr. Fishbein of Chicago and Dr. Waltman Walters of Rochester, Minn., Editor-in-Chief of *Archives of Surgery* and the Lewis-Walters' *Practice of Surgery.*

The meeting will be held during the thirteenth annual convention of the Mississippi Valley Medical Society. All ethical physicians and those interested in medical writing are cordially invited. Non-members will be charged a small fee for the afternoon course in medical writing; there is no registration fee for the evening session. Write Harold Swanberg, M.D., Secretary, W.C.U. Bldg., Quincy, Illinois, for a complete program.

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

PRACTICE OF ALLERGY. Second Edition. Warren T. Vaughan, M.D., Richmond, Va. Revised by J. Harvey Black, M.D., Dallas, Texas. 1132 pages. Illus. Price $15.00, cloth. St. Louis: C. V. Mosby Co., 1948.

PRINCIPLES GOVERNING EYE OPERATING ROOM PROCEDURES. Emma I. Clevenger, R.N. Supervisor, Eye Operating Room, New York Eye and Ear Infirmary, New York City. 215 pages. Illus. Price $5.50, cloth. St. Louis: C. V. Mosby Co., 1948.

MR. PRESIDENT—HOW IS YOUR HEALTH? Karl C. Wold, M.D., Saint Paul and Minneapolis: Bruce Publishing Company, 1948. Price $3.00.

To anyone, physician or layman, who has even a small amount of interest in history, this comparatively small volume of 214 pages, written by Dr. K. C. Wold, a well-known oculist of Saint Paul, will prove interesting reading.

The volume represents many hours of research, and the assembling of material has been the author's main hobby for a number of years. He has avoided the use of unnecessary medical or technical terms, or has explained those used, so that the text is fully understandable for the non-medical reader. It should appeal to the laity as well as those interested in medicine and allied fields.

SYNOPSIS OF NEUROPSYCHIATRY. Lowell S. Selling, M.D., Ph.D., D.P.H., F.A.C.P. 561 pages. Illus. Price $6.50. St. Louis: The C. V. Mosby Co., 1947.

This is the second edition of Dr. Selling's book which outlines in a brief but helpful manner the various, most common neuropsychiatric disorders. Though of necessity brief, it considers the various syndromes and symptom complexes in an orderly fashion.

The section on neurology reviews the basic anatomy of the nervous system by way of foundation for the later consideration of neurological diseases which are divided into conditions affecting (1) the peripheral nervous structures, (2) the spinal cord, (3) the brain stem, (4) the cranial nerves, (5) the cerebellum, (6) the cerebrum, (7) the meninges, (8) the antonomic and sympathetic nervous system, (9) a chapter dealing with disorders of symbol use, which is an additional chapter in this edition describing disorders of speech and expression, (10) the convulsive states and (11) muscle syndromes.

The section on mental disorders discusses Basic Principles, the General Etiology of Mental Diseases, Symptomatology of Mental Disease, Neurosyphilis, Alcoholism, Drug Addiction, the Psychoses, the Psychoneuroses, Psychopathic Personality, Psychosomatic Medicine, Behavior Disorders of Childhood, and Mental Deficiency.

The chapter on psychiatric treatment is one of the best, in that it follows no one school but attempts to consider therapy from an over-all viewpoint, giving fair consideration to the psychoanalytic, psychobiologic and physiologic schools of psychiatry.

This is an excellent book for the student and general physician. It will be a time-saver for the specialist in the field. It has a well-chosen reference bibliography.

L. R. GOWAN, M.D.

Classified Advertising

Replies to advertisements should be mailed in care of MINNESOTA MEDICINE, *2642 University Avenue, Saint Paul 4, Minn.*

WANTED—Assistant to general surgeon in suburban town to do general practice and obstetrics. Good salary, and partnership later, if mutually agreeable. Address E-89, care MINNESOTA MEDICINE.

POSITION WANTED—Experienced receptionist, who enjoys meeting people, desires position in physician's office. Address E-105, care MINNESOTA MEDICINE.

WANTED—Registered laboratory technician with interest in x-ray; 26 bed hospital, approved by American College of Surgeons; located in summer and winter resort town; salary $250 a month; 44-hour week. Address E-104, care MINNESOTA MEDICINE.

FOR RENT—Saint Paul Midway district, physician's office on business corner. Excellent neighborhood, four schools. Will remodel to suit. Address E-101, care MINNESOTA MEDICINE.

FOR SALE—Building, practice and equipment. Building includes residence, barber shop and dental office. Eighteen miles from Twin Cities. Write E-100, c/o MINNESOTA MEDICINE.

WANTED—Physician, veteran, graduate Northwestern University, age 35, one year's experience with F.A.C.S., desires association with qualified surgeon. Address E-102, care MINNESOTA MEDICINE.

WANTED—Medical technician for suburban doctor's office. Some knowledge of x-ray also needed. Address E-103, care MINNESOTA MEDICINE.

FOR SALE—Complete x-ray equipment in good condition; also all-Victor electrical treatments, several pieces. Pay for Bucky, x-ray table and equipment, and all rest will be thrown in. Time to pay, if desired. Bargain. Address E-61, care MINNESOTA MEDICINE.

PROFESSIONAL MEDICAL ILLUSTRATOR—Accurate drawings made from case reports or written descriptions. Charts, graphs, exhibits prepared. References. Reasonable rates. Address Herbert Hunter, **Box 86, Star Prairie, Wisconsin.**

WANTED—General practitioner for small, well-equipped Northern Minnesota clinic. Excellent opportunity, guarantee with partnership offered. Address E-93, care MINNESOTA MEDICINE.

WANTED—Doctor for general practice—September and October. $400 month with room and board. Small southern Minnesota town with community hospital. Address E-97, care MINNESOTA MEDICINE.

WANTED—Young physician as associate or partner or to buy very good general practice twenty-five miles from Twin Cities. Address E-96, care MINNESOTA MEDICINE.

FOR SALE—1 electro surgical Burdick cautery, 1 Sterns McCarthy Nesbit modification transurethral telescope and complete accessories (new, not used), 1 Heidbrink gas machine with synergist attachment and ether vaporizer complete, 1 McIntosh polysine, 1 suction and ether machine, 1 Vattenborg colonic irrigator, 1 Scanlan Morris steel examining table with leather cushions, 1 Scanlan Morris steel nose and throat treatment chair, 1 Scanlan Morris steel 2 basin irrigating stand. All above items are in good condition, reasonably priced. For further information, write P. O. Box 282, New Ulm, Minnesota.